SERVICE MANUAL

XB-2, XB-2N

CAUTION !
see safety notice inside

May, 1991

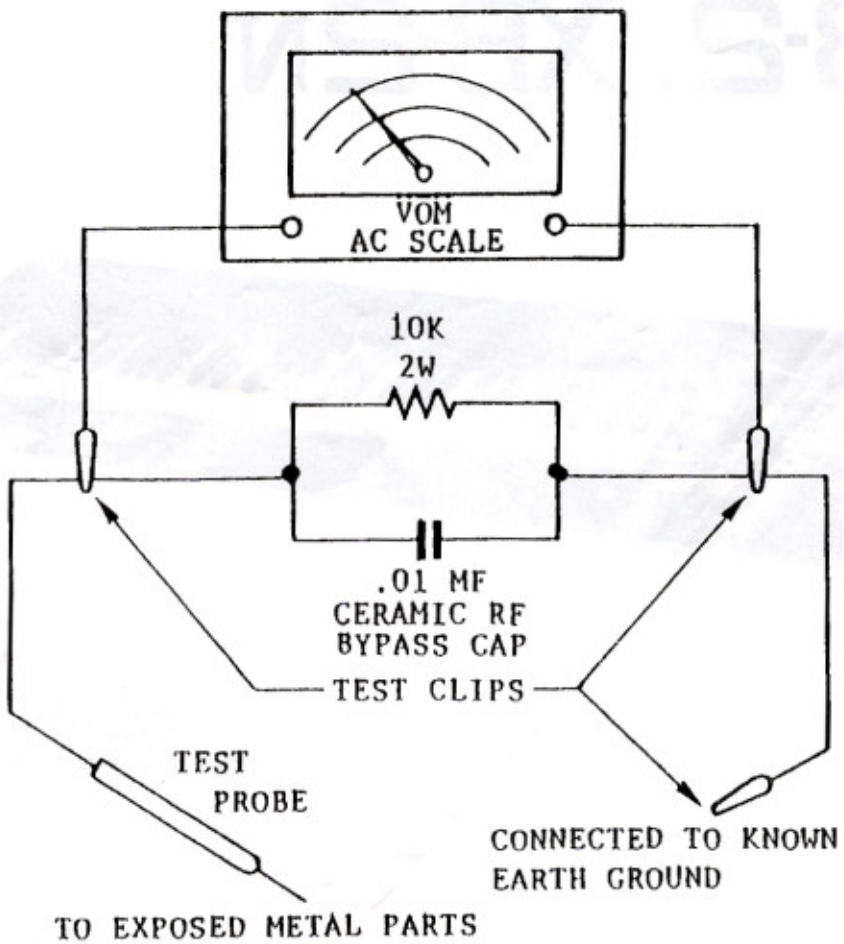
HAMMOND SUZUKI, LTD.

SAFETY NOTICE

Great care has been taken in the design and manufacture of this product to assure that no shock hazard exists on any exposed metal parts. Internal service operations can expose the technician to hazardous line voltages and accidentally cause these voltages to appear on exposed metal parts during repair or reassembly of product components. To prevent this, work on these products should only be performed by those who are thoroughly familiar with the precautions necessary when working on this type of equipment.

To protect the user, it is required that all enclosure parts and safety interlocks be restored to their original condition and the following tests be performed before returning the product to the owner after any service operation.

Plug the AC line cord directly into a line voltage AC receptacle (do not use an isolation transformer for this test) and turn the product on. Connect the network (as shown below) in series with all exposed metal parts and a known earth ground such as a water pipe or conduit. Use an AC VOM of 5,000 ohms per volt or higher sensitivity to measure the voltage drop across the network. Move the network connection to each exposed metal part (metal chassis, screw heads, knobs and control shafts, escutcheon, etc.) and measure the voltage drop across the network. Reverse the line plug and repeat the measurements. Any reading of 4 volts RMS or more is excessive and indicates a potential shock hazard which must be corrected before returning the product to the user.



CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

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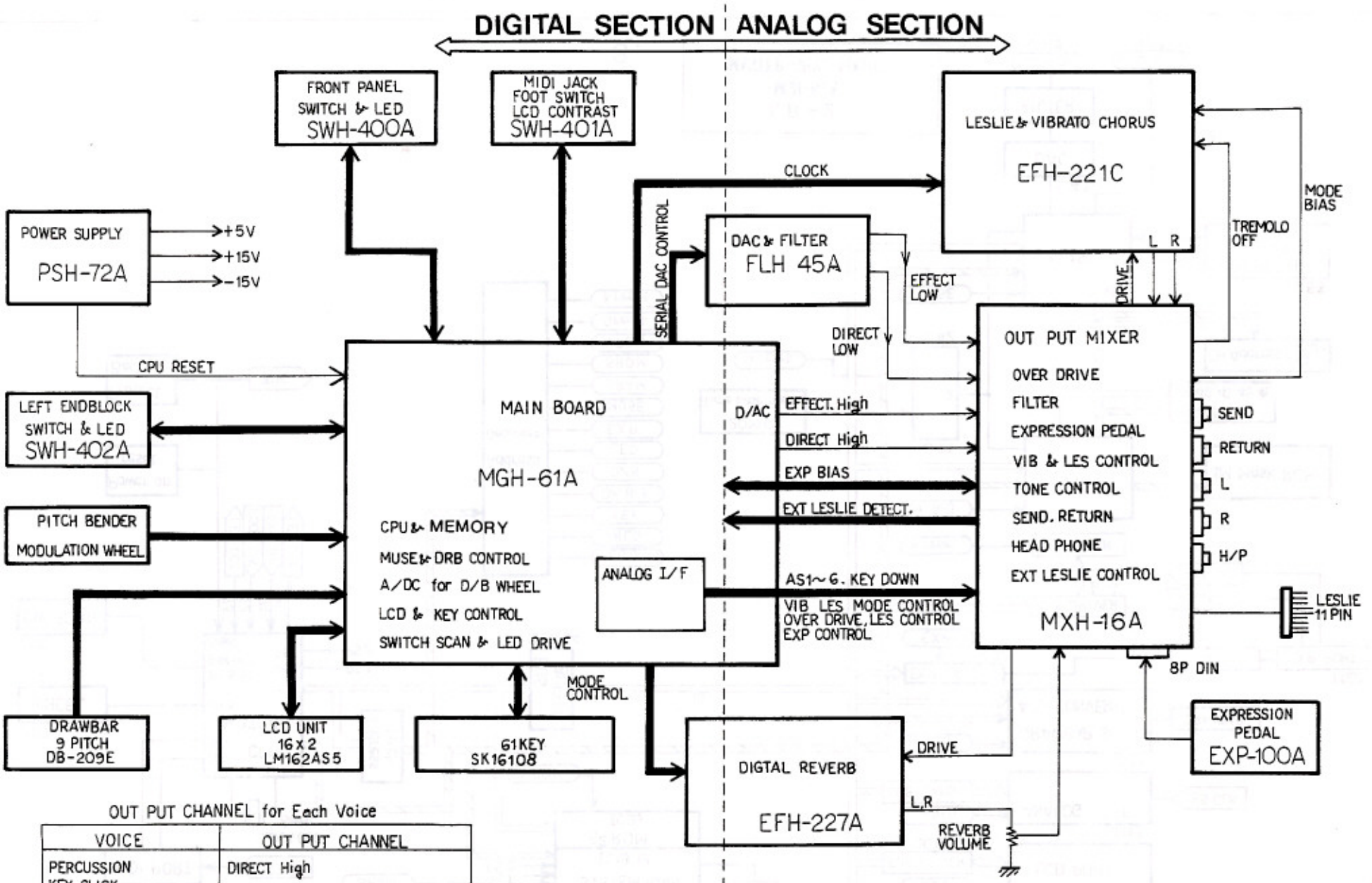
1. SPECIFICATIONS

KEYBOARD	C1 to C6	61Key	
DRAWBARS	9 Pitch		
	B-TYPE		*
	Mellow		*
	Brite		*
	Slow Attack	On/Off	*
	Sustain	On/Off	*
	Fold Back	Adjustable	*
PERCUSSION	2nd		
	3rd		
	Decay	Fast/Slow	*
	Volume	Soft	*
	Velocity	On/Off	*
VIBRATO	On/Off		*
	V1.V2.V3.		*
	C1.C2.C3		
	Speed Slow.Norm.Mid.Fast		*
KEY CLICK	Off.Soft.Norm.		*
OVER DRIVE	On/Off		*
	Depth	MOD Wheel	
TUNING	1 Hz Steps		*
	430-450		*
TRANSPOSE	±6 Semitones		*
LCD DISPLAY	16 Characters.2 Lines		
PRESETS	Cancel, 1-8 memorized		
	Patch Library 128 Patches		
LESLIE	Slow/Fast		
VELOCITY	Keyboard(MIDI OUT)Off.1.2		*
	Percussion On/Off		*
KEY SPLIT	On/Off		*
	Split point		*
	split Drawbar Set		*
PITCH BENDER	± 1-12 Semitones		*

MOD WHEEL	
ORGAN SOLO	MIDI OUT OFF
POWER	On/Off
LESLIE	Standard 11 Pin out
HEAD PHONE	Stereo
SEND/RETURN	For external Leslie Only
LINE OUT	L/R
FOOT SWITCH	Programmable *
LCD	Contrast adjustable
EXPRESSION	Internal/External *
MIDI	In/Out/Thru
	Function Programmable *
TONE CONTROL	Bass/Treble
DIMENSIONS	Width: 45 3/4(in) 116cm
	Height: 3 3/4(in) 10cm
	Depth: 12 1/4(in) 31cm
	Weight: 30lbs. 13.5kg
ACCESSORIES	Foot Switch.Case.Stand.
	Expression Pedal.

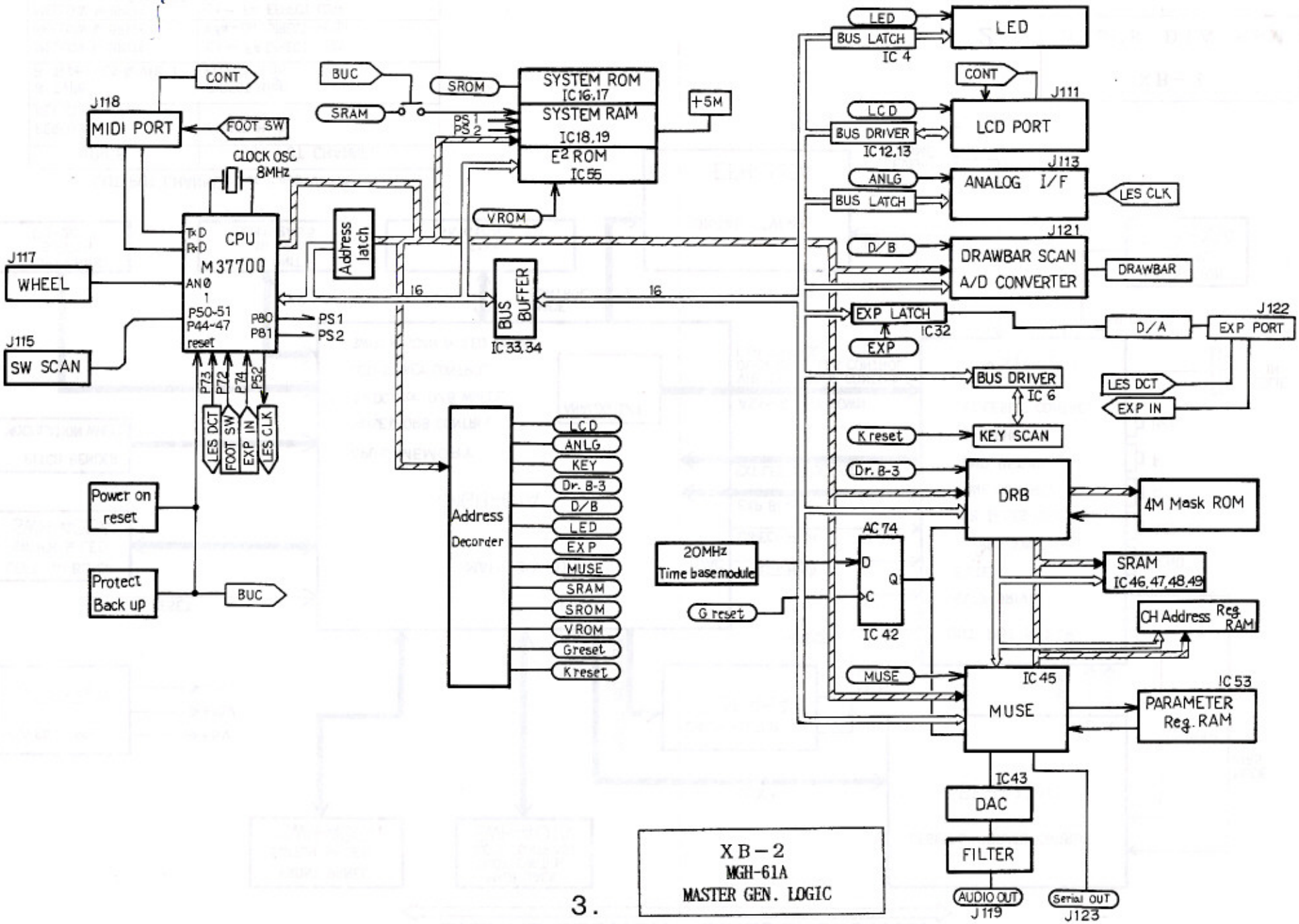
☆ Features accessed through LCD



OUT PUT CHANNEL for Each Voice

VOICE	OUT PUT CHANNEL
PERCUSSION KEY CLICK	DIRECT High
B TyPe B Type (LES & VIB)	DIRECT High EFFECT High
MELLOW & BRITE MELLOW & BRITE	C1 ~ F4 DIRECT LOW F♯4 ~ C6 DIRECT High
MELLOW & BRITE (LES & VIB)	C1 ~ F4 EFFECT LOW F♯4 ~ C6 EFFECT High

2. XB-2 BLOCK DIAGRAM



XB-2
MGH-61A
MASTER GEN. LOGIC

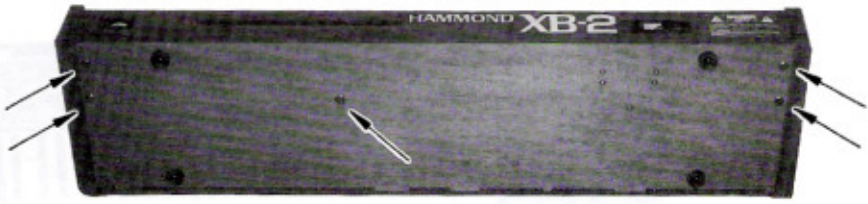
4. DISASSEMBLY PROCEDURE

CAUTION:DISCONNECT ORGAN FROM A.C.LINE VOLTAGE SOURCE.

(1) REMOVE TOP BOARD :

Loosen 5 screws of bottom board and remove the top board.

Note : Don't pull these screws excessively. Screws are not removed structurally.



(2) REMOVE KEYBOARD :

a) Follow steps(1) REMOVE TOP BOARD.

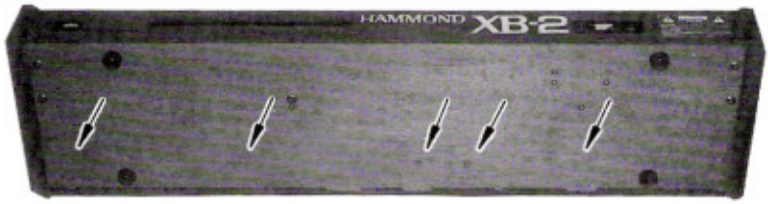
b) Remove 5 screws from the bottom.

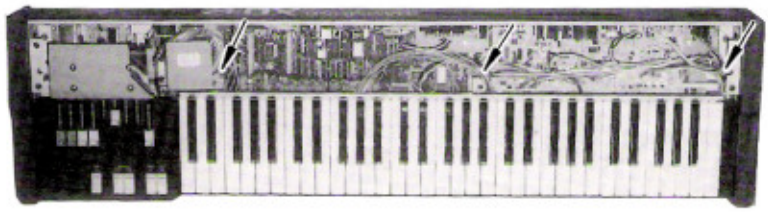
c) Remove 3 screws on upperside.

d) At first, lift up the right side of keyboard. and then remove the keyboard.

[The left side of keyboard is under the endblock assembly.]

※ caution : wiring is connected.





REMOVE ENDBLOCK :

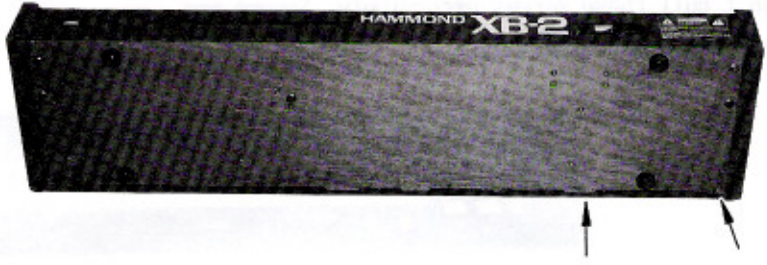
a) Follow steps (2) REMOVE THE KEYBOARD

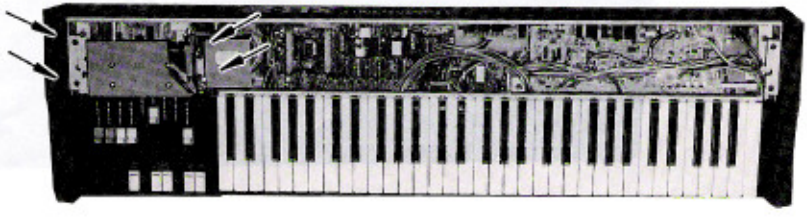
b) Remove 2 screws from the bottom.

c) Remove 4 screws on the upperside.

d) and then remove the endblock assembly.

※ Caution : wirings are connected.





NOTE-During the test procedure the following must be maintained unless otherwise stated:

a. Expression pedal at maximum
b. Drawbar type: Mellow
c. All switches, Tonebars in the OFF position.
d. Total volume at maximum

TEST STEP TEST	SETTING TAB & DRAWBAR	PLAY KEYS	ADJUST	TEST POINT	SPEC.
+5V			PSH-72A VR1	MGH-61A J110-①	DC+5.00V
EXPRESSION PEDAL	EXP. PEDAL MAX		MXH-16A R169	MXH-16A U7-⑥ (TP2)	DC-15mV
	EXP. PEDAL MIN		MXH-16A R29	↑	DC-170mV
OVER DRIVE WHEEL ADJUST	MODULATION MIN WHEEL		MXH-16A R177	MXH-16A U8-⑥ (TP1)	DC-60mV
	MODULATION MAX WHEEL		MXH-16A R176	↑	DC-3mV
E. LESLIE & VIBRATO	LESLIE ON		MXH-16A R180	MXH-16A J309-⑨	DC+12.0V
	VIBRATO ON MODE V2		MXH-16A R172	↑	DC+11.8V
	VIBRATO ON MODE V3		MXH-16A R179	↑	DC+10.4V
TOTAL VOLUME Lch	D/B 8' MAX LESLIE OFF TOTAL VOLUME MAX	A3	MXH-16A R46	LESLIE OUT "L" JACK or MXH-16A R11	220mV R.M.S
TOTAL VOLUME Rch	↑	↑	MXH-16A R43	LINE OUT "R" JACK or MXH-16A R10	220mV R.M.S
OVER DRIVE GAIN L	D/B 8' MAX LESLIE OFF TOTAL VOLUME MAX OVER DRIVE ON MOD. WHEEL MIN	↑	MXH-16A R76	LINE OUT "L" JACK or MXH-16A R11	220mV R.M.S
OVER DRIVE GAIN R	↑	↑	MXH-16A R178	LINE OUT "R" JACK or MXH-16A R10	220mV R.M.S
NOISE LEVEL L	ALL OFF TOTAL VR MAX	ANY KEY ON		LINE OUT "L" JACK or MXH-16A R11	0.5mV R.M.S WITH JIS "A" NET FILTER
		OFF		↑	0.05mV R.M.S ↑
NOISE LEVEL R	↑	ANY KEY ON		LINE OUT "R" JACK or MXH-16A R10	0.5mV R.M.S ↑
		OFF		↑	0.05mV R.M.S ↑

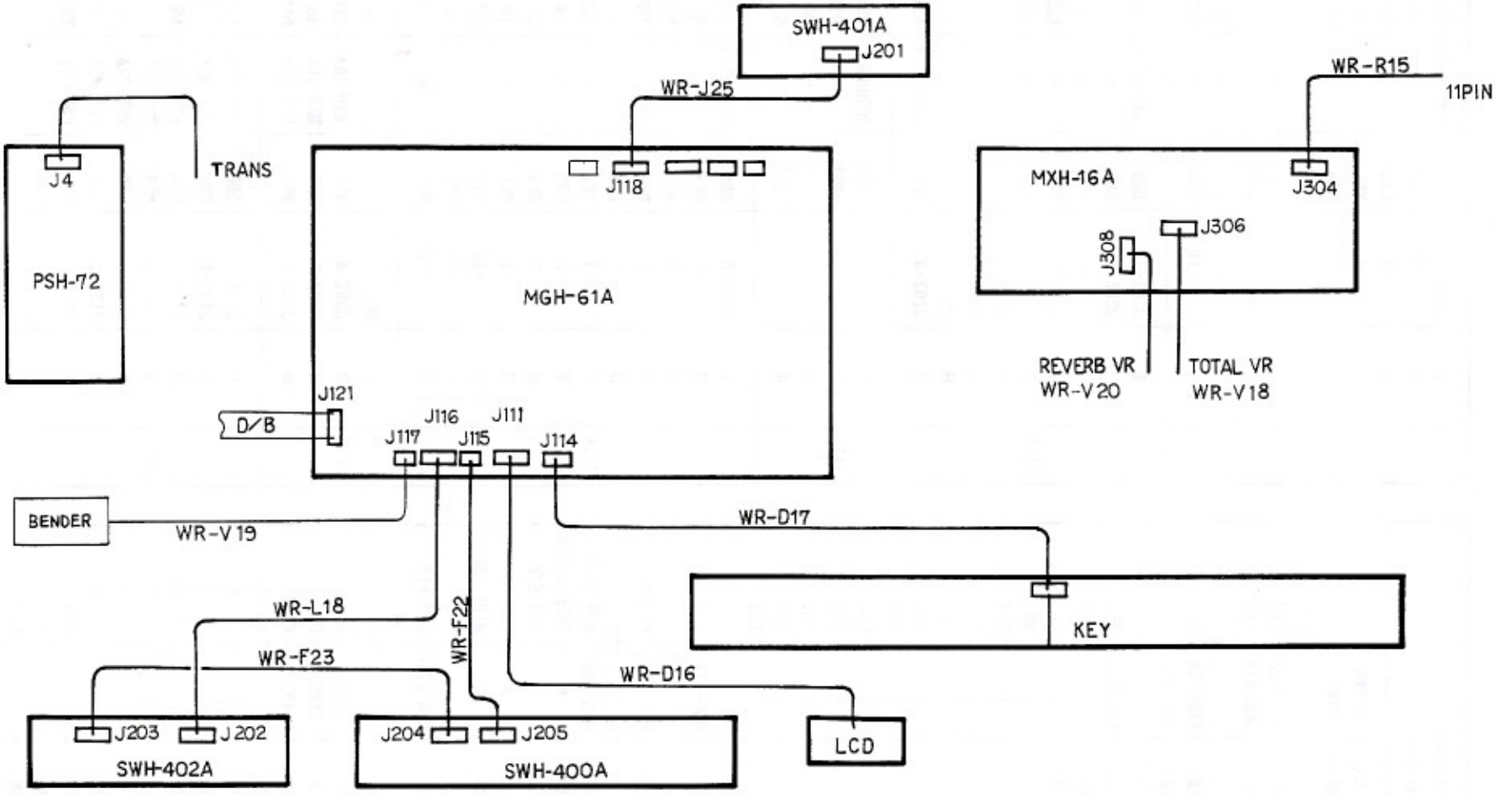
[HAMMOND XB-2] Date : Apr.11. 1991

Model 6. MIDI Implementation Chart Version : 1.0

Function···		Transmitted	Recognized	Remarks
Basic Channel	Default	1	1	
	Changed	1 - 16	1 - 16	memorized
Mode	Default	MODE 3	MODE 3	
	Messages	×	×	
	Altered	**********	×	
Note Number:		36-96	36-96	
	True voice	**********		
Velocity	Note ON	○	○	
	Note OFF	×	×	
After Touch	Key's	×	×	
	Ch's	×	×	
Pitch Bend		○	○	
Control Change	Modulation 1	○	×	
	Main Volume 7	○	○	EXPRESSION
	Tremolo 92	×	○	LESLIE slow/fast
	NRPN			
	LESLIE s/f 0	○	○	
	VIBRATO 2	○	○	
	SUSTAIN 6	○	○	
	PERCUSSION			
	2nd 18	○	○	
	3rd 19	○	○	
	soft 20	○	○	
	Decay fast 21	○	○	
Prog Change : True #		○ 1 - 8	○ 1 - 8	If ENABLE SW ON
		**********	1 - 8	
System Exclusive		○	○	
Common	:Song Pos	×	×	
	:Song Sel	×	×	
	:Tune	×	×	
System Real Time	:Clock	×	×	
	:Commands	×	×	
Aux Mes - sages	:Local ON/OFF	×	×	
	:All Notes OFF	×	○	(123)
	:Active Sense	○	○	
	:Reset	×	×	
Notes				

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO ○ : Yes

Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO × : No



XB-2

7. SUB WIRING CHART
105-17430

MAIN BOARD MGH－61A

PLUG No.	FROM PIN. No.	TO PLUG & PIN. No.	WIRE COLOR	TO PWB NAME	FUNCTION
	1	J2-5	YEL	PSH-72A	+5V
	2	J112-1	YEL	MGH-61A	+5V
J110	3	NC			
	4	J2-3	BLK	PSH-72A	DG
	5	J112-3	BLK	MGH-61A	DG
	1	LCD-8	BLK	LCD UNIT	Vss
	2	-7	YEL		Voo
	3	-9	WHT		Vo
	4	-6			RS
	5	-10			R/W
	6	-5			E
J111	7	-11			DB0
	8	-4			DB1
	9	-12			DB2
	10	-3			DB3
	11	-13			DB4
	12	-2			DB5
	13	-14			DB6
	14	↓ -1	↓		DB7
	1	J110-2	YEL	MGH-61A	+5V
J112	2	NC			
	3	J110-5	BLK	MGH-61A	D. GND
	1	J305-1	BRN	MXH-16A	KEY DOWN
	2	J307-8	RED	〃	OVER DRIVE
	3	J305-3	ORG	〃	LES S/F
J113	4	J305-5	YEL	〃	LES ON
	5	J305-4	GRN	〃	MIDI EXP'ON
	6	NC			
	7	J1302-2	WHT	EFH-221C	LES VIB
	8	NC			DG
	1	J16-1	YEL	61KEY	5V
	2	-2	BLK	SXPG	DG
	3	-3	BRN	143521	KRST
	4	-4	RED		KDB 6
	5	-5	ORG		5
	6	-6	YEL		4
J114	7	-7	GRN		3
	8	-8	BLU		2
	9	-9	VIO		1
	10	-10	GRY		0
	11	-11	WHT		STB
	12	-12	PNK		ACK
	13	-13	BRN		REQ
	14	NC			
	15	NC			
	1	J205-1	BRN	SWH-400A	S2
	2	-2	RED	〃	S3
	3	-3	ORG	〃	S4
	4	-4	YEL	〃	S5
J115	5	-5	GRN	〃	S6
	6	-6	BLU	〃	S7
	7	-7	VIO	〃	S1
	8	-8	GRY	〃	S0
	9	-9	WHT	〃	5V
	10	-10	PNK	〃	LED COM
	1	J202-1	BRN	SWH-402A	LED1
	2	J202-2	RED	〃	LED2
	3	J202-5	ORG	〃	LED3
	4	J202-6	YEL	〃	LED4
J116	5	J202-8	GRN	〃	LED5
	6	NC			
	7	NC			
	8	NC			
	9	J202-3	BLU	SWH-402A	+5V
	1		YEL	BENDER	+5V
J117	2		RED	〃	PITCH
	3		WHT	〃	MOD
	4		BLK	〃	G
	1	J201-6	BRN	SWH-401A	OUT
	2	-2	BLK	〃	G
	3	-4	RED	〃	OUT
	4	-9	ORG	〃	THRU
	5	-5	BLK	〃	G
J118	6	-7	YEL	〃	THRU
	7	-3	GRN	〃	IN
	8	-8	BLK	〃	G
	9	-1	BLU	〃	IN
	10	-10	VIO	〃	CONT
	11	-11	GRY	〃	+5V
	12	-12	WHT	〃	FOOT SW
	1	NC			AG
J119	2	J302-4	WHT	MXH-16A	EFFECT
	3	J302-2	BLK	MXH-16A	AG
	4	J302-1	RED	MXH-16A	DIRECT IN
	1	J1-1	ORG	PSH-72A	+15V
	2	J132-6	ORG	FLH-45A	+15V
	3	J1-7	BLK	PSH-72A	AG
J120	4	J132-4	BLK	FLH-45A	AG
	5	J1-5	GRN	PSH-72A	-15V
	6	J132-2	GRN	FLH-45A	-15V
	7	J2-1	PNK	PSH-72A	RESET

MAIN BOARD MGH-61A

PLUG No.	FROM PIN. No.	TO PLUG & PIN. No.	WIRE COLOR	TO PWB NAME	FUNCTION
	1	DRAWBAR		DRAWBAR	GND
	2				4´
	3				2´
	4				1´
	5				1 3/5´
J121	6				8´
	7				16´
	8				1 1/3´
	9				2 2/3´
	10				5 1/3´
	11				+5V
	12	↓		↓	
	1	J303-3	BRN	MXH-16A	MOD
	2	NC			AG
	3	NC			AG
J122	4	J303-4	YEL	MXH-16A	EXP OUT
	5	J303-5	GRN	MXH-16A	LES DCT
	6	NC			
	7	J303-7	VIO	MXH-16A	EXP IN
	1	J131-6	VIO	FLH-45A	BCLK
	2	J131-3	BRN	FLH-45A	LRCLK
	3	J131-4	RED	FLH-45A	WCLK
J123	4	J131-5	BLU	FLH-45A	DOUT2
	5	NC			DOUT1
	6	J131-7	YEL	FLH-45A	5V
	7	J131-8	BLK	FLH-45A	DG
	1	J309-1	BRN	MXH-16A	S1
	2	J309-2	RED		S2
	3	-3	ORG		S3
	4	-4	YEL		S4
	5	-5	GRN		S5
J124	6	J307-6	BLU	↓	S6
	7	J1504-1	VIO	EFH-227A	DSP1
	8	J1504-2	GRY	EFH-227A	DSP2
	9	NC			DSPR
	10	NC			DSPW
	11	NC			DRESET
	12	NC			DG

LINE FILTER BOARD SWK-290C

	1		BRN	EPH-96	
	2	NC		TRANS	
	3		RED		
	4		ORG		
J2	5	NC			
	6		YEL		
	7		GRN	↓	
	8	NC			
	9		BLU	SW	SW

POWER SUPPLY BOARD PSH-72A

	1	J120-1	ORG	MGH-61A	+15V
	2	J1503-1	ORG	EFH-227A	+15V
	3	J301-8	WHT	MXH-16A	RELAY
J1	4	J301-7	BLK	MXH-16A	RELAY G
	5	J120-5	GRN	MGH-61A	-15V
	6	J1503-3	GRN	EFH-227A	-15V
	7	J120-3	BLK	MGH-61A	AG
	8	J1503-2	BLK	EFH-227A	AG
	1	J120-7	PNK	MGH-61A	RESET
	2	J1503-4	BLK	EFH-227A	DG
J2	3	J110-4	BLK	MGH-61A	DG
	4	J1503-5	YEL	EFH-227A	+5V
	5	J110-1	YEL	MGH-61A	+5V
	1		RED	EPH-96	
	2		BLK	TRANS	
	3		RED		
J4	4	NC			
	5		YEL		
	6	NC			
	7		YEL		

LEFT PANEL SW BOARD SWH-402A

	1	J116-1	BRN	MGH-61A	LED1
	2	-2	RED		LED2
	3	-9	BLU		+5V
J202	4	NC			LED6
	5	J116-3	ORG		3
	6	-4	YEL		4
	7	NC			7
	8	J116-5	GRN		5
	1	J204-1	BRN	SWH-400A	S4
	2	-2	RED		S5
	3	-3	ORG		S6
J203	4	-6	BLU		S7
	5	-5	GRN		S1
	6	-4	YEL	↓	S0

DAC & FILTER BOARD FLH-45A

PLUG No.	FROM PIN.No.	TO PLUG & PIN.No.	WIRE COLOR	TO PWB NAME	FUNCTION
J131	1	NC			DG
	2	NC			DG
	3	J123-2	BRN	MGH-61A	LRCLK
	4	-3	RED		WCLK
	5	-4	BLU		DOUT2
	6	-1	VIO		BCLK
	7	-6	YEL		5V
	8	-7	BLK	↓	DG
J132	1	J301-5	GRN	MXH-16A	-15V
	2	J120-6	GRN	MGH-61A	-15V
	3	J301-3	BLK	MXH-16A	AG
	4	J120-4	BLK	MGH-61A	AG
	5	J301-1	ORG	MXH-16A	+15V
	6	J120-2	ORG	MGH-61A	+15V
J133	1	J310-1	RED	MXH-16A	EFFECT2
	2	J310-2	GND	MXH-16A	AD
	3	J310-3	WHT	MXH-16A	DIRECT2

MIXER BOARD MXH-16A

J301	1	J132-5	ORG	FLH-45A	+15V
	2	J1303-1	ORG	EFH-221C	+15V
	3	J132-3	BLK	FLH-45A	AG
	4	J1303-3	BLK	EFH-221C	AG
	5	J132-1	GRN	FLH-45A	-15V
	6	J1303-5	GRN	EFH-221C	-15V
	7	J1-4	BLK	PSH-72A	RELAY G
	8	J1-3	WHT	PSH-72A	RELAY
J302	1	J119-4	RED	MGH-61A	DIRECT IN
	2	J119-3	BLK	MGH-61A	AG
	3	NC			AG
	4	J119-2	BRN	MGH-61A	EFFECT IN
J303	1	NC			AG
	2	NC			AG
	3	J122-1	BRN	MGH-61A	MOD
	4	-4	YEL	MGH-61A	EXP OUT
	5	-5	GRN	MGH-61A	LES DCT
	6	NC			
	7	J122-7	VIO	MGH-61A	EXP IN
J304	1	①	BRN	11PIN	
	2	②	RED		
	3	③	ORG		
	4	⑨	BLK		
	5	⑩	BLK		
	6	④	BLU		
	7	⑤	VIO	11PIN	
	8	⑥	GRY		
	9	⑦	WHT		
	10	NC			
	11	⑧	PNK	↓	
J305	1	J113-1	BRN	MGH-61A	KEY DOWN
	2	NC			
	3	J113-3	ORG	MGH-61A	LES S/F
	4	J113-5	GRN	MGH-61A	MIDI EXPON
	5	J113-4	YEL	MGH-61A	LES ON
	6	NC			AG
J306	1		BLK	TOTAL VR	GND
	2		BLK		GND
	3		RED		R IN
	4		RED		L IN
	5		WHT		R OUT
	6		WHT	↓	L OUT
J307	1	J1301-2	BRN	EFH-221C	T.B.SIG IN
	2	-5	RED	EFH-221C	MAIN Lch
	3	-8	BLK	EFH-221C	AG
	4	NC			AG
	5	J1301-6	GRN	EFH-221C	SUB Lch
	6	J124-6	BLU	MGH-61A	S6
	7	J309-6	PNK	MXH-16A	S5(MX)
	8	J113-2	RED	MGH-61A	OVER DRIVE
J308	1	J1501-6	RED	EFH-227A	REV OUT
	2		BLK	REVERB-	GND
	3	NC	WHT	VR	GND
	4				L IN
	5		RED	EFH-227A	
J309	1	J124-1	BRN	MGH-61A	S1
	2	-2	RED		S2
	3	-3	ORG		S3
	4	-4	YEL		S4
	5	-5	GRN	↓	S5
	6	J307-7	PNK	MXH-16A	S5(MX)
	7	NC			AG
	8	J1302-1	GRY	EFH-221C	DEPTH ON
	9	J1302-4	WHT	EFH-221C	BIAS
J310	1	J133-1	RED	FLH-45A	EFFECT 2
	2	J133-2	GND	FLH-45A	AD
	3	J133-3	WHT	FLH-45A	DIRECT 2

LESLIE & VIB BOARD
EFH-221C

PLUG No.	FROM PIN.No.	TO PLUG & PIN.No.	WIRE COLOR	TO PWB NAME	FUNCTION
J	6	J307-5	GRN	MXH-16A	SUB Lch
1301	7	NC			SUB Rch
	8	J307-3	BLK	MXH-16A	AG
	1	J309-8	GRY	MXH-16A	DEPTH ON
J	2	J113-7	WHT	MXH-16A	LES VIB
1302	3				AG
	4	J309-9	WHT	MXH-16A	BIAS
	1	J301-2	ORG	MXH-16A	+15V
J	2	NC			+15V
1303	3	J301-4	BLK	MXH-16A	AG
	4	NC			AG
	5	J301-6	GRN	MXH-16A	-15V
	6	NC			-15V

DIGTAL REVERB BOARD
EFH-227A

	1	NC		TOTAL VR	
	2		RED	REVERB	SIG OUT
	3	NC		VR	
J	4		WHT		SIG OUT
1501	5	NC			
	6	J308-1	RED	MXH-16A	SIG IN
	7	NC			
	8	NC			
	1	J1-2	ORG	PSH-72A	+15V
	2	J1-8	BLK		AG
J	3	J1-6	GRN		-15V
1503	4	J2-2	BLK		DG
	5	J2-4	YEL	↓	+5V
J	1	J124-7	VIO	MGH-61A	DSP 1
1504	2	J124-8	GRY	MGH-61A	DSP 2
	3	NC			

LCD

	1	J111-14	WHT	MGH-61A	Vss
	2	-12	WHT		Vdd
	3	-10	WHT		Vo
	4	-8	WHT		RS
	5	-6	WHT		R/W
	6	-4	WHT		E
	7	-2	BLK		DB0
	8	-1	WHT		DB1
	9	-3	WHT		DB2
	10	-5	WHT	↓	DB3
	11	J111-7	WHT	MGH-61A	DB4
	12	-9	WHT	〃	DB5
	13	-11	WHT	〃	DB6
	14	-13	WHT	〃	DB7

MIDI JACK BOARD
SWH-401A

	1	J118-9	BLU	MGH-61A	IN
	2	-2	BLK		IN
	3	-7	GRN		IN
	4	-3	RED		OUT
	5	-5	BLK		OUT
J201	6	-1	BRN		OUT
	7	-6	YEL		THRU
	8	-8	BLK		THRU
	9	-4	ORG		THRU
	10	-10	VIO		CONT
	11	-11	GRY		+5V
	12	-12	WHT	↓	FOOT SW

PRESET SW BOARD
SWH-400A

	1	J203-1	BRN	SWH-402A	S4
	2	-2	RED		S5
	3	-3	ORG		S6
J204	4	-6	YEL		S0
	5	-5	GRN		S1
	6	-4	BLU	↓	S7
	1	J115-1	BRN	MGH-61A	S2
	2	-2	RED		S3
	3	-3	ORG		S4
	4	-4	YEL		S5
J205	5	-5	GRN		S6
	6	-6	BLU		S7
	7	-7	VIO		S1
	8	-8	GRY		S0
	9	-9	WHT		5V
	10	-10	PNK	↓	LED COM

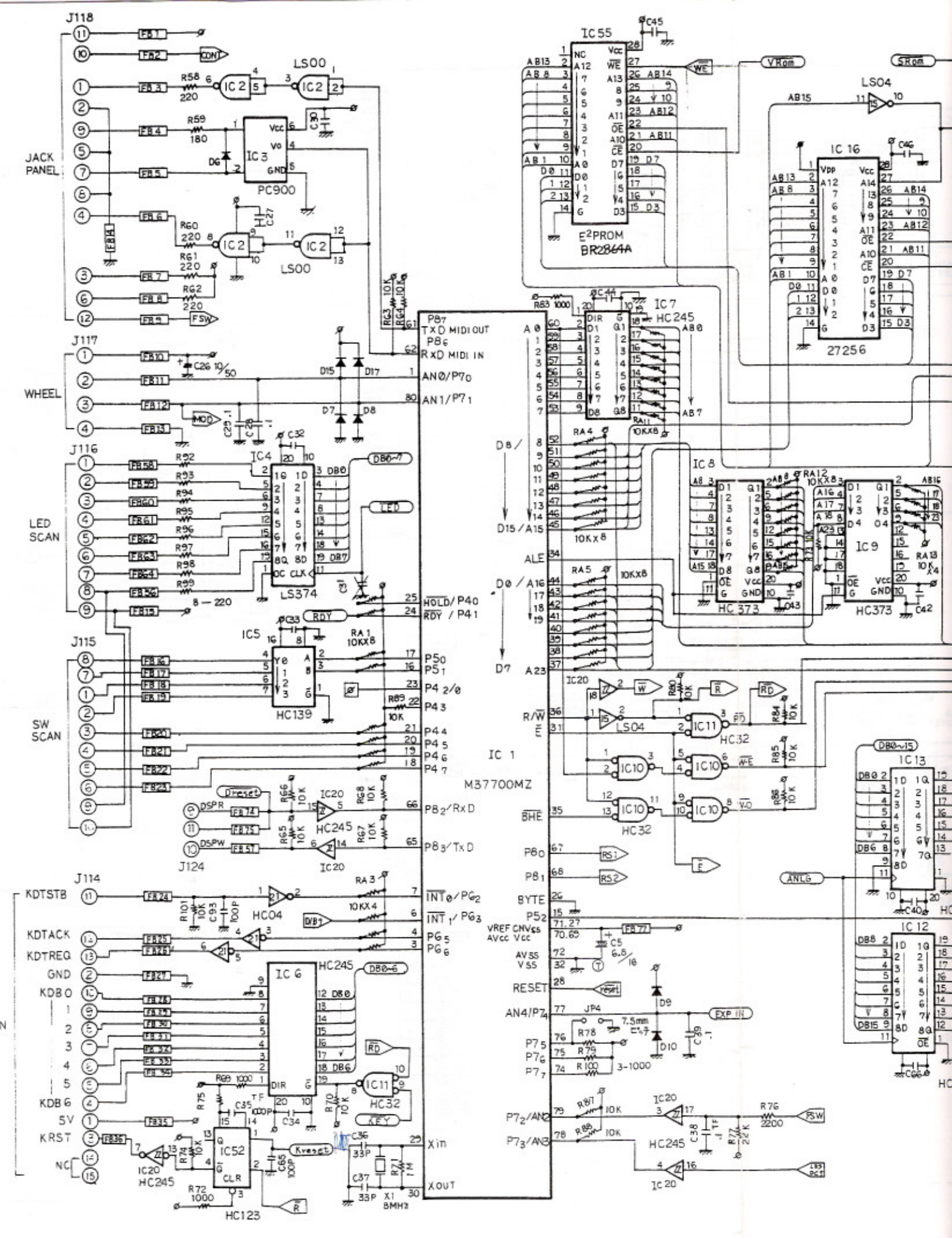
9. PRINTED WIRING BOARD ASS'Y LIST

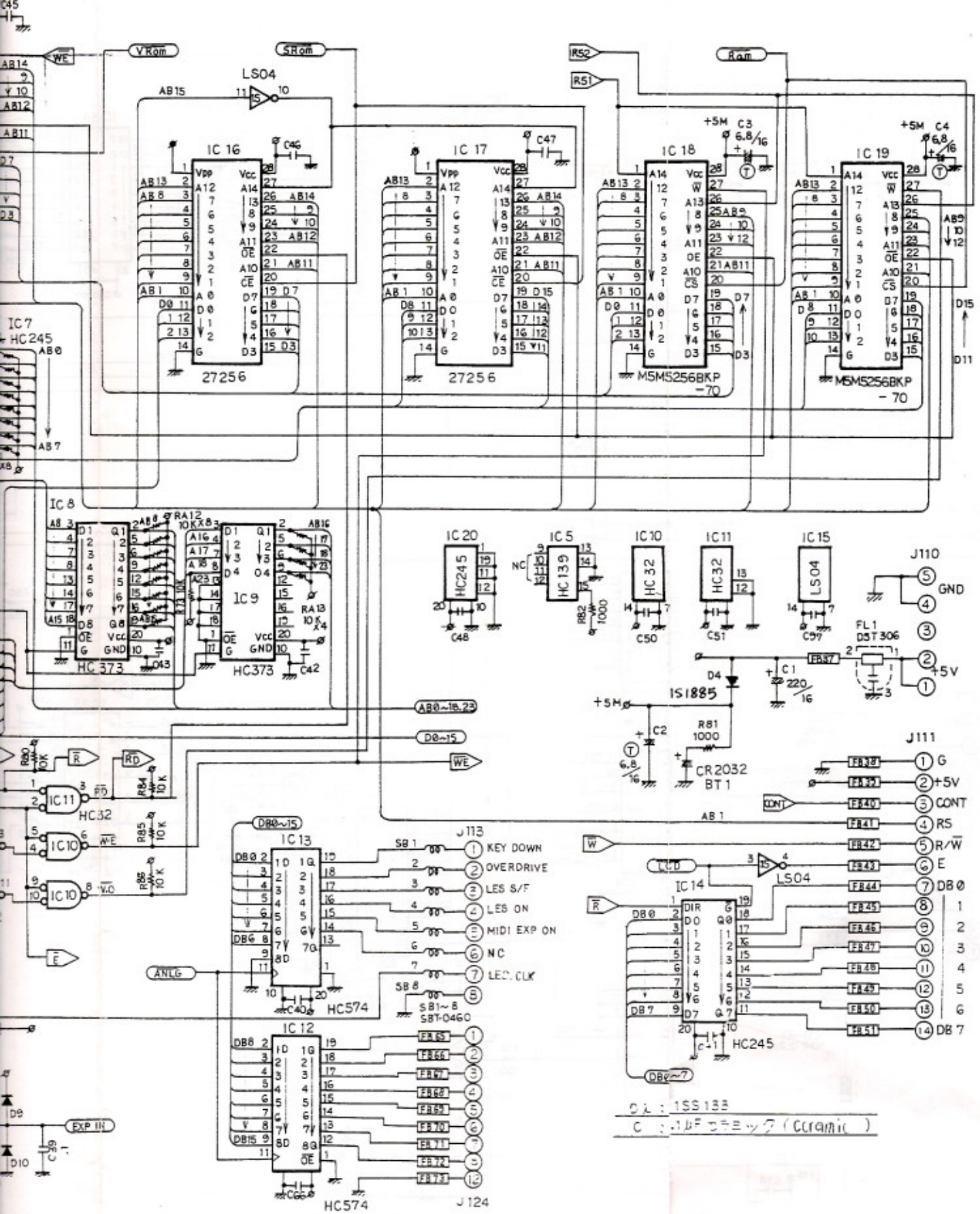
XB-2

MAIN	MGH-61A	228-22206
LINE FILTER	SWK-290C	225-28218
POWER SUPPLY	PSH-72A	224-18206
PRESET SWITCH	SWH-400A	225-34206
MIDI JACK	SWH-401A	225-34216
LEFT PANEL SWITCH	SWH-402A	225-34216
DAC & FILTER	FLH-45A	222-17241
MIXER	MXH-16A	230-06201
DIGITAL REVERB	EFH-227A	223-41226
LESLIE & VIBRATO	EFH-221C	223-40288

XB-2N (WITHOUT DIGITAL REVERB)

MAIN BOARD IS MGH-61AN 228-22206N
(which is same as MGH-61A except adding JP4 to MGH-61A)


J118
JACK PANEL
PC900
LS00
J117
WHEEL
J116
LED SCAN
LS374
J115
SW SCAN
HC139
J124
J114
KDTSTB
KDTACK
KDTREQ
GND
KDB0
KDB6
5V
KRST
NC
HC04
HC245
HC123
IC 1
M37700MZ
P87 TxD MIDI OUT
P86 RxD MIDI IN
AN0/P70
AN1/P71
HOLD/ P40
RDY / P41
P50
P51
P4 2/0
P43
P44
P45
P46
P47
P82/RxD
P83/TxD
INT0/PG2
INT1/PG3
PG5
PG6
P80
P81
BYTE
P52
RESET
AN4/P74
P75
P76
P77
P72/AN2
P73/AN3
Xin
Xout
IC55
E2PROM
BR2864A
IC 16
27256
LS04
IC7
HC373
IC8
IC9
IC10
HC32
IC11
IC13
IC12
IC20
IC52
VRom
SRom
WE
RD
DB0~7
DB0~15
LED
ANLG
EXP IN
FSW
RESET
JP4
7.5mm
3-1000
8MHz

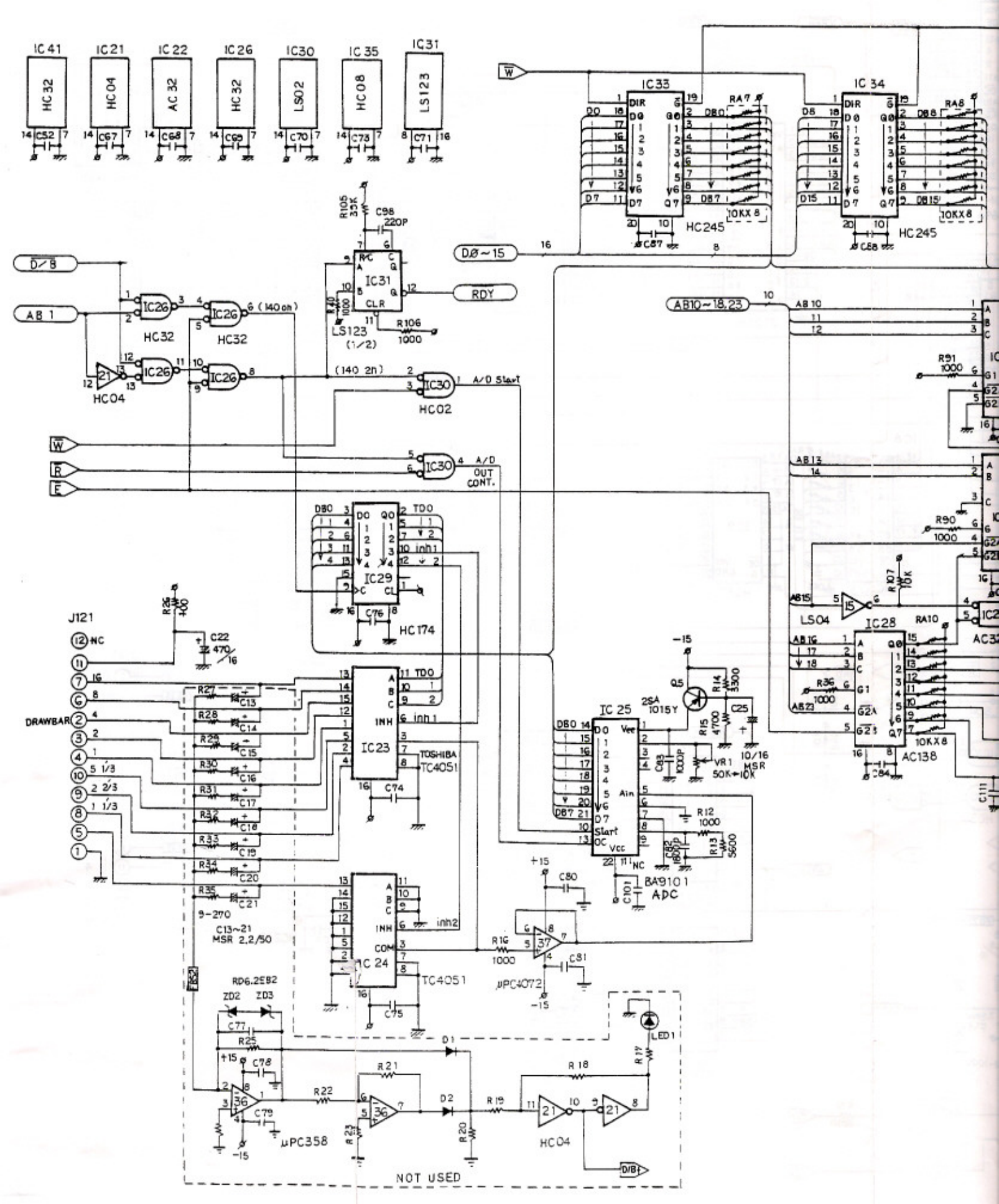


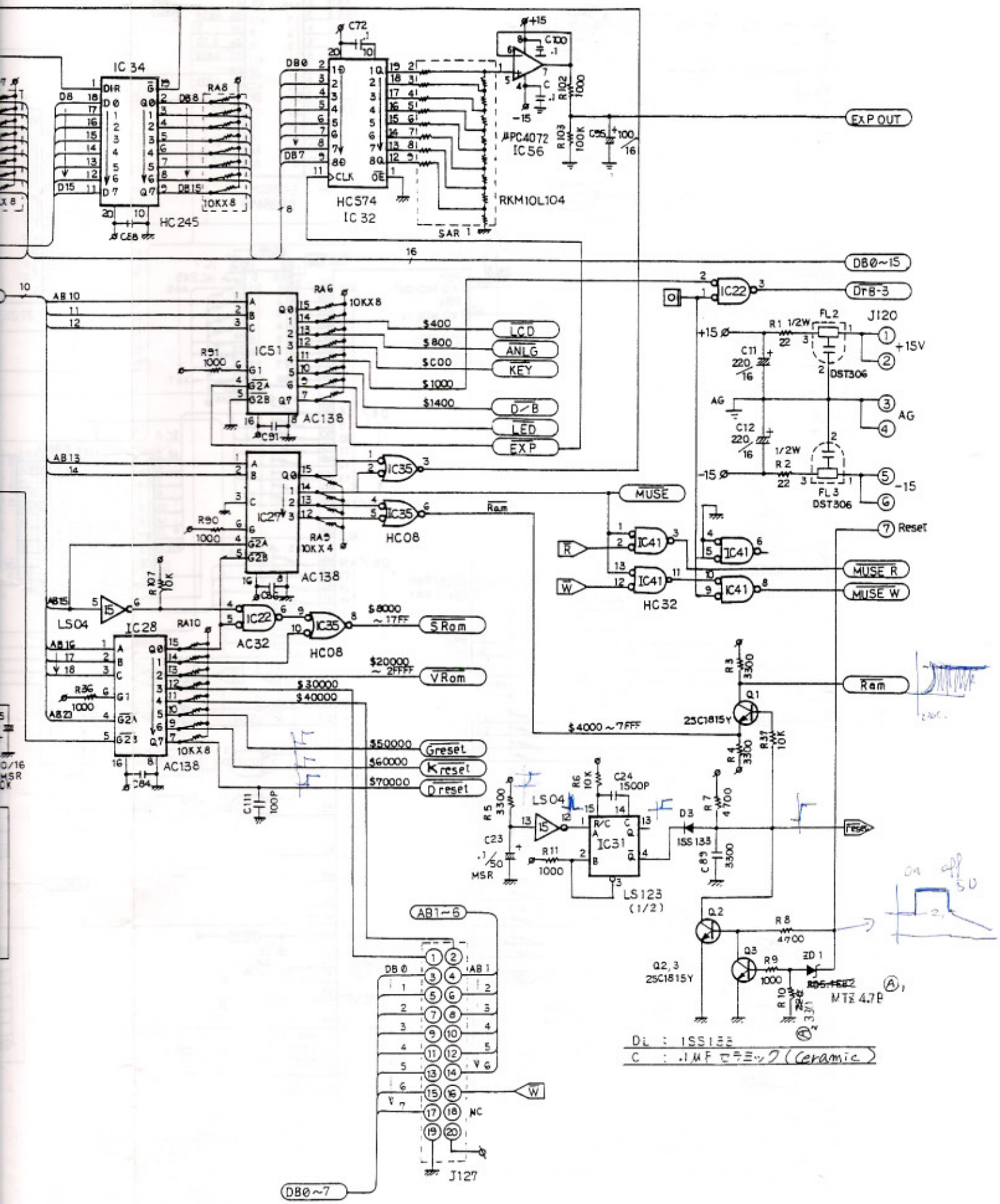
D : 1SS133

C : .1μF セラミック (Ceramic)

XB-

MAIN	
MGH-61A	1/
228-22206	

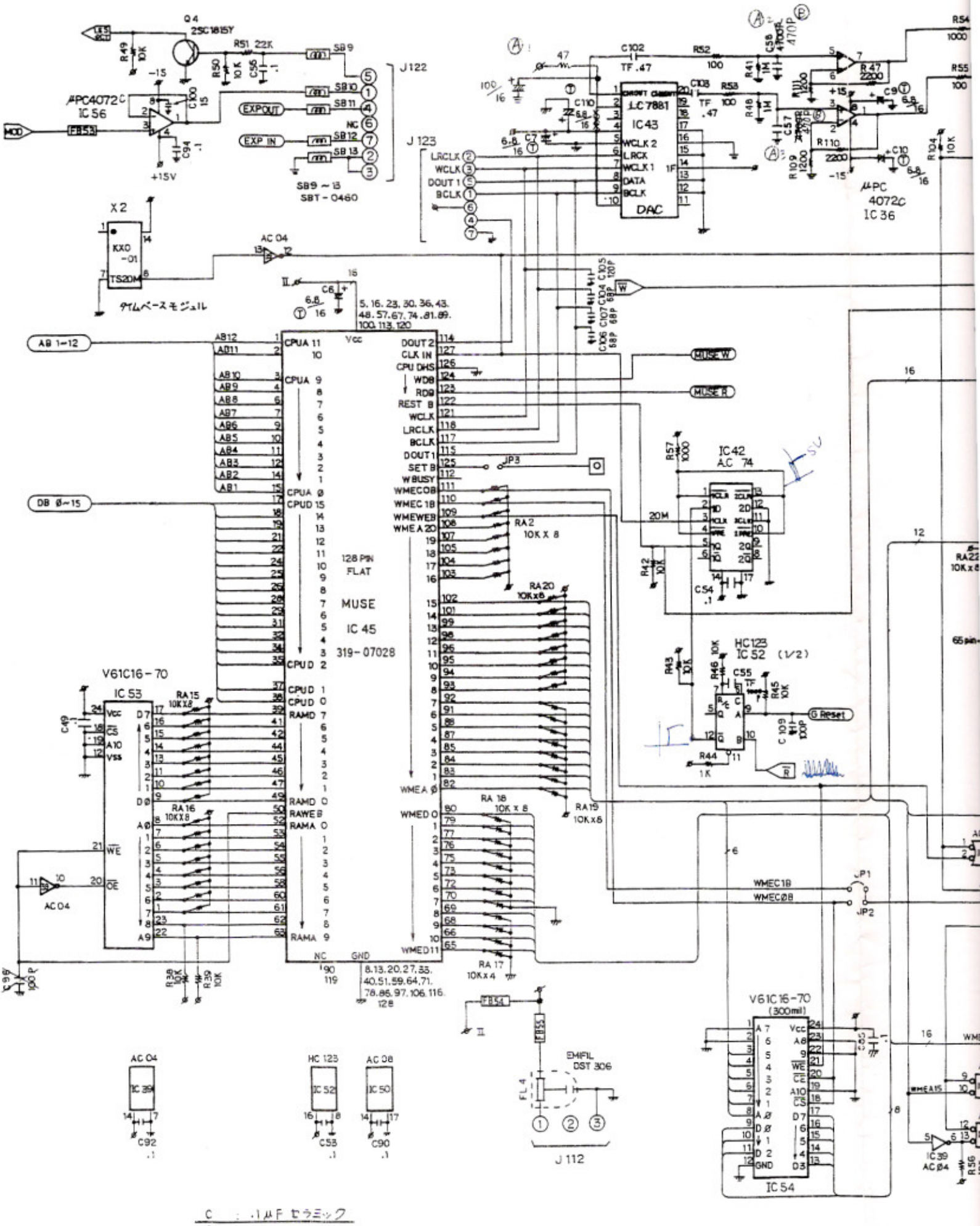

IC41
HC32
IC21
HC04
IC22
AC32
IC26
HC32
IC30
LS02
IC35
HC08
IC31
LS123
IC33
HC245
IC34
HC245
D/B
AB 1
HC32
HC32
HC04
(140 ohm)
(140 2n)
IC30
HC02
A/D Start
IC30
A/D OUT CONT.
W
R
F
RDY
LS123 (1/2)
R105 33K
C98 220P
R106 1000
D0~15
AB10~18,23
R91 1000
R90 1000
R107 10K
LS04
IC28
AC138
IC29
HC174
TDO
inh1
J121
DRAWBAR
R26 400
C22 470/16
IC23
TOSHIBA TC4051
C74
IC 25
2SA 1015Y
Q5
R14 3300
C25 10/16 MSR
VR1 50K←10K
R15 4700
C83 1000P
R12 1000
R13 5600
C82 1800P
BA9101 APC
C101
C80
C81
R16 1000
IC 24
TC4051
μPC4072
inh2
R27 C13
R28 C14
R29 C15
R30 C16
R31 C17
R32 C18
R33 C19
R34 C20
R35 C21
9-270
C13~21 MSR 2.2/50
RD6.2EB2
ZD2
ZD3
C77
R25
C78
R22
C79
μPC358
R21
R23
R20
D2
R19
R18
R17
LED1
D1
HC04
D/B
NOT USED



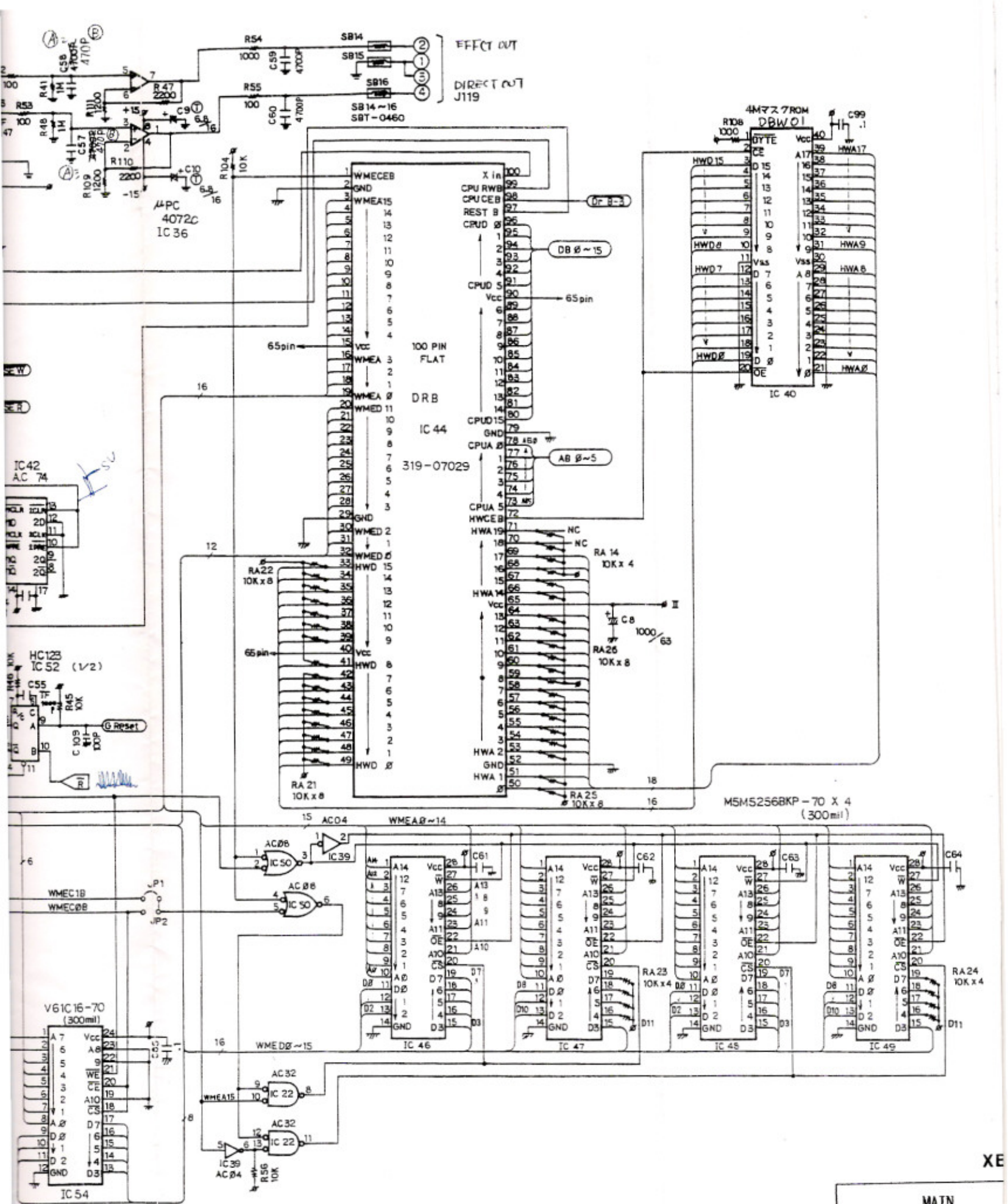
XB-

MAIN	
MGH-61A	2
228-22206	

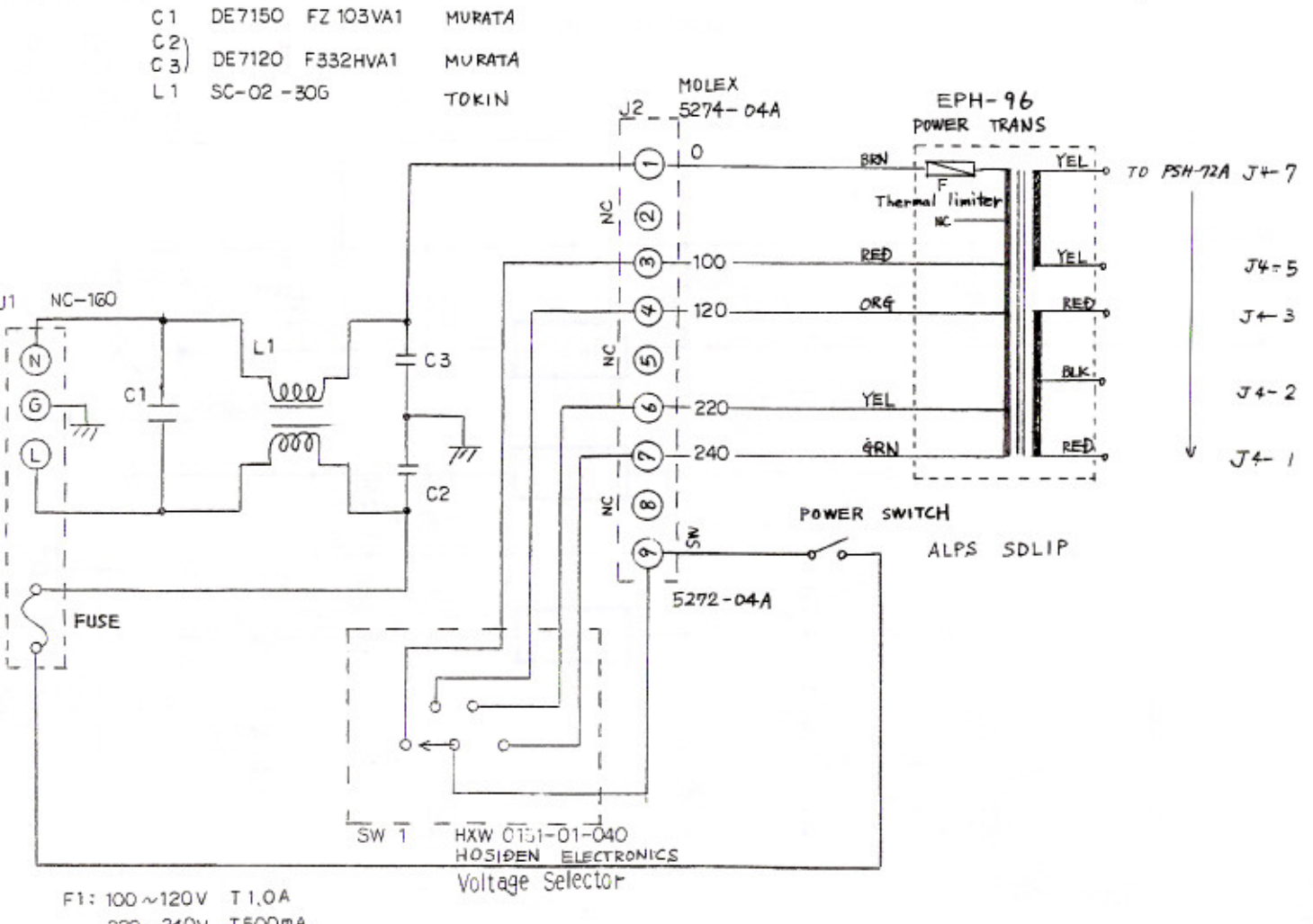
10 – 2/3


Q4
2SC1815Y
R51 22K
SB9
SB10
SB11
SB12
SB13
EXPOUT
EXP IN
NC
J122
J123
SB9 ~ 13
SBT-0460
APC4072C
IC 56
+15V
-15
MOD
FB53
X2
KXO -01
TS20M
タイムベースモジュール
AC 04
IC 43
LC 7881
DAC
WCLK 2
LRCK
WCLK 1
DATA
BCLK
LRCLK
WCLK
DOUT 1
BCLK
μPC 4072C
IC 36
IC 42
AC 74
HC123
IC 52 (V2)
G Reset
MUSE
IC 45
319-07028
128 PIN FLAT
CPUA 11
CPUA 9
CPUA Ø
CPUD 15
CPUD 2
CPUD 1
CPUD 0
RAMD 7
RAMD 0
RAWE B
RAMA 0
RAMA 9
Vcc
GND
DOUT 2
CLK IN
CPU DHS
WDB
RDB
REST B
WCLK
LRCLK
BCLK
DOUT 1
SET B
WBUSY
WMECØB
WMEC 1B
WMEWEB
WMEA 2Ø
WMEA Ø
WMED Ø
WMED 11
AB 1-12
DB Ø-15
MUSE W
MUSE R
JP3
RA2 10K X 8
RA 20 10K x8
RA 18 10K x 8
RA19 10K x8
RA 17 10K x 4
RA15 10K x8
RA16 10K x8
V61C16-70
IC 53
V61C16-70 (300mil)
IC 54
WMEC1B
WMECØB
JP1
JP2
EMIFIL DST 306
FL4
J 112
IC 39
IC 52
IC 50
C92
C55
C90
C : .1μF セラミック
T : TANTALUM

10 313 L

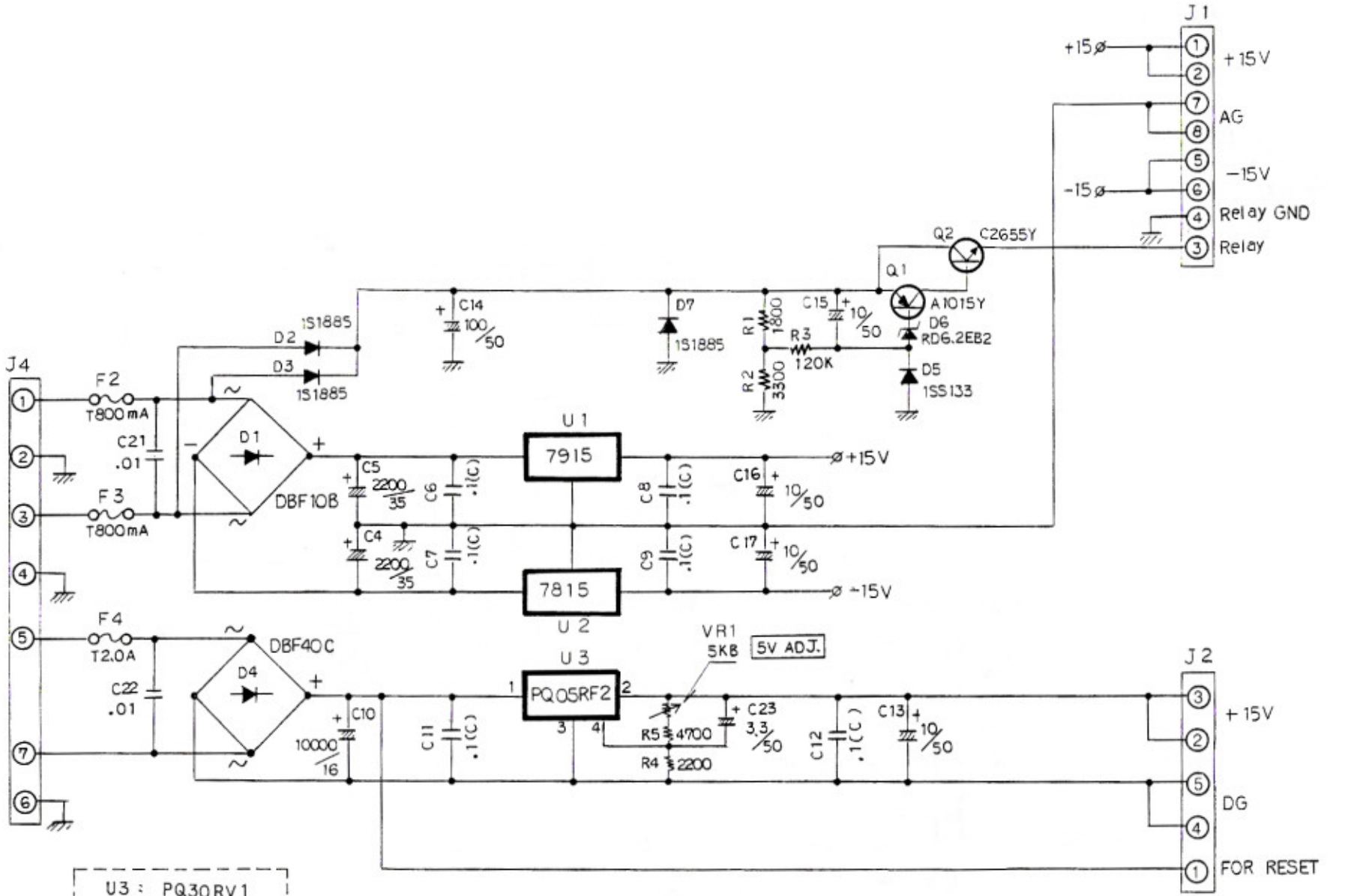


MAIN
MGH-61A
228-22206



XB-2

LINE FILTER
SWK-290C
225-28218

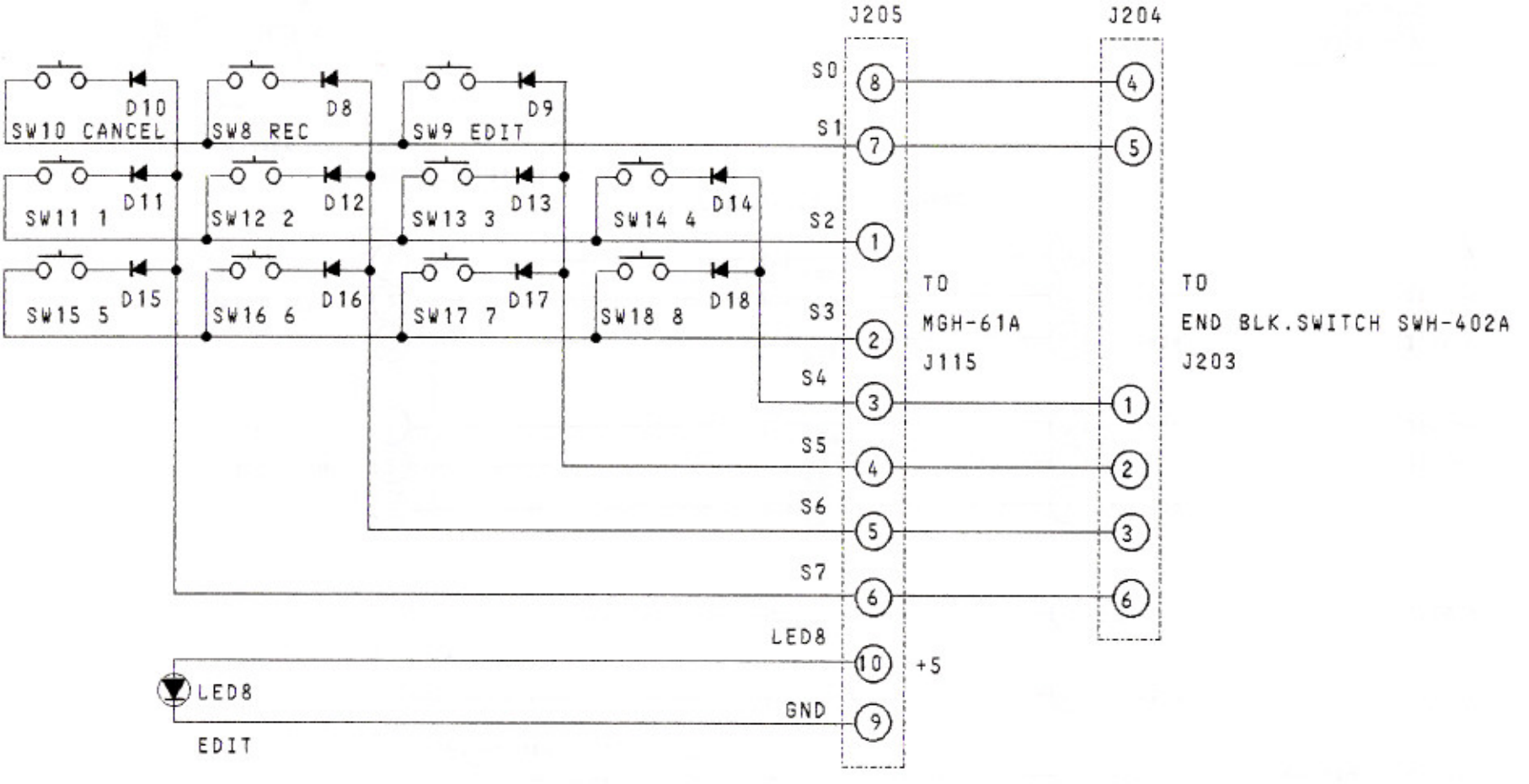


U3 : PQ30RV1
VR1 : 1KΩ
R4 : 390
R5 : 470
IN EARLY MODELS

(C) : Ceramic Disc Capacitors

XB-2

POWER SUPPLY
PSH-72A
224-18206



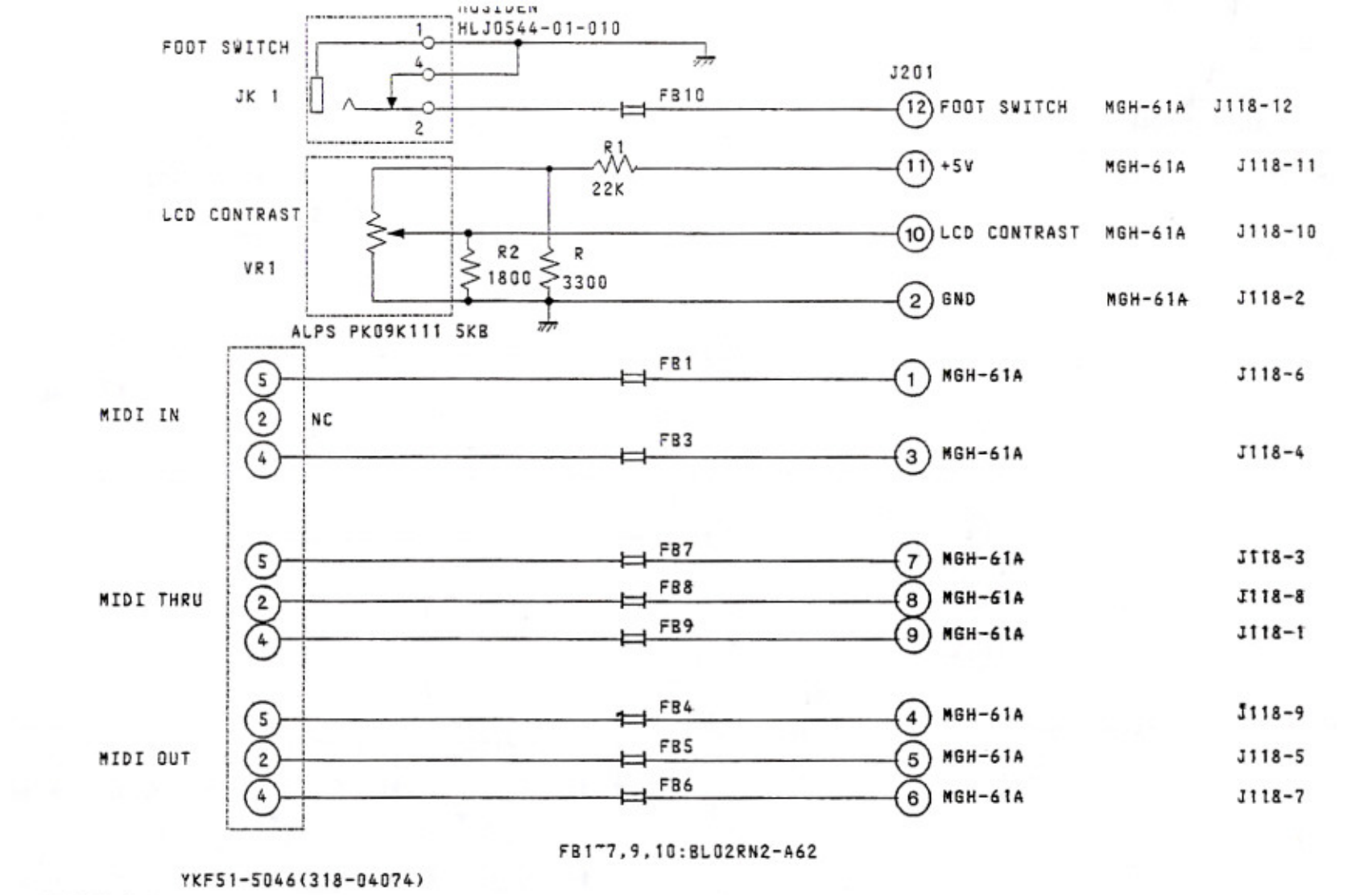
SW8~18 : TM1-01 FUJISOKU

D8 ~18 : 1SS133 ROHM

LED8 : GL3TR8 SHARP

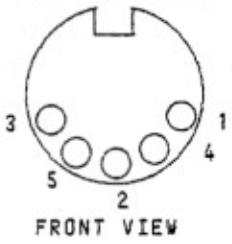
XB－2

PRESET SWITCH
SWH-400A
225-34206



YKF51-5046(318-04074)

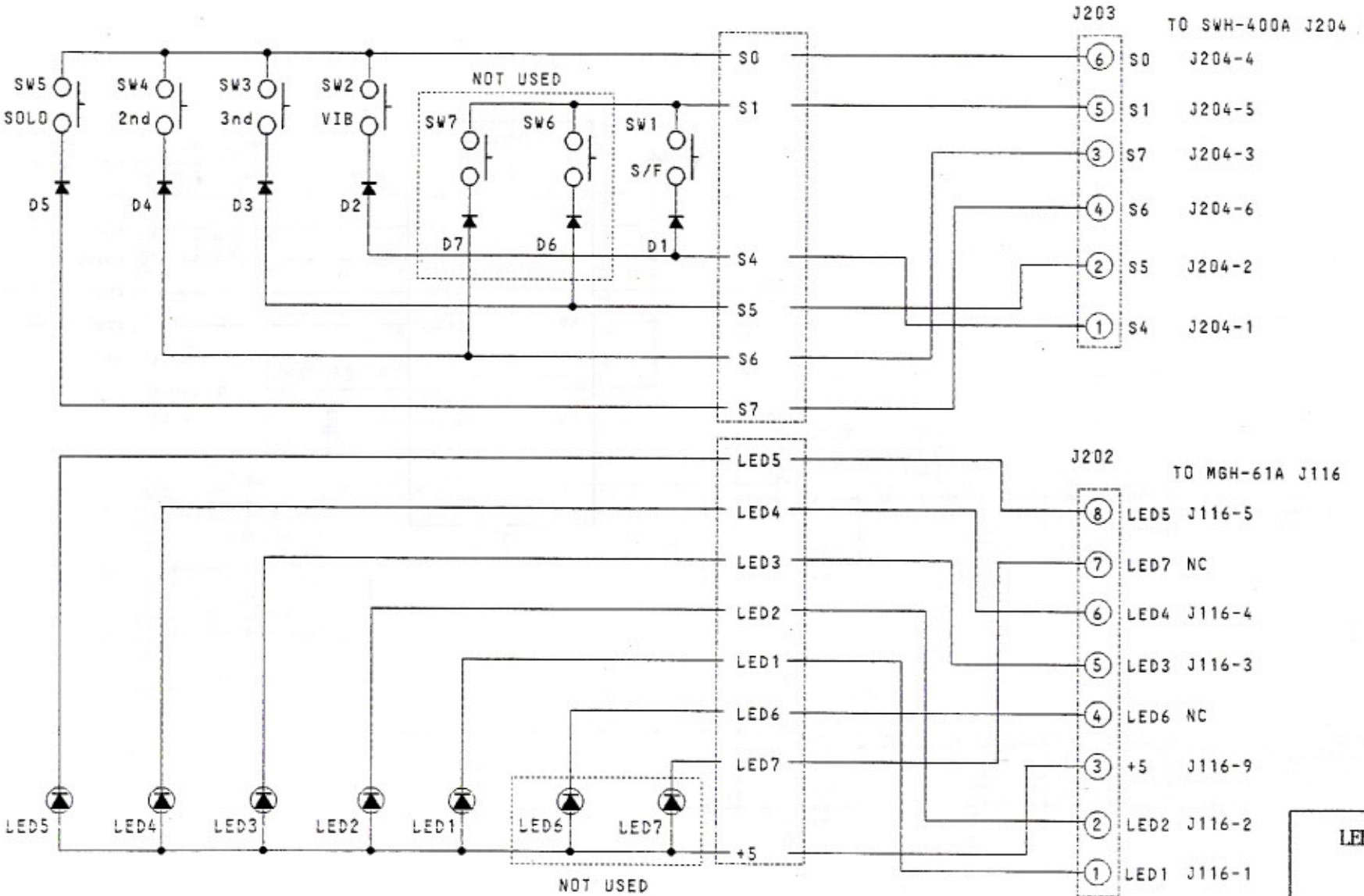
SP DIN JACK



XB-2

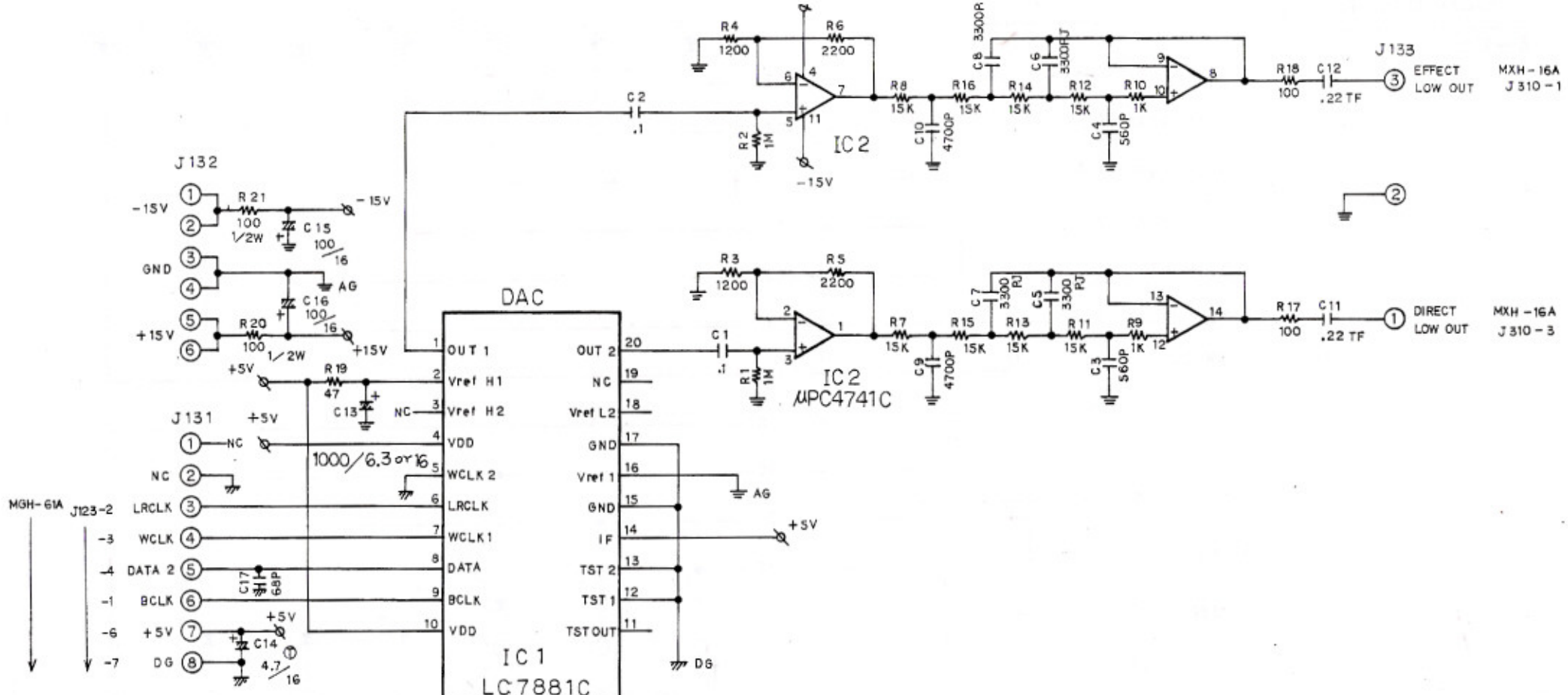
MIDI JACK
SWH-401A
225-34221

SW1~5	FM2-5	TOTSUKO
D1~5	1SS133	ROHM
LED1~5	GL3TR8	SHARP



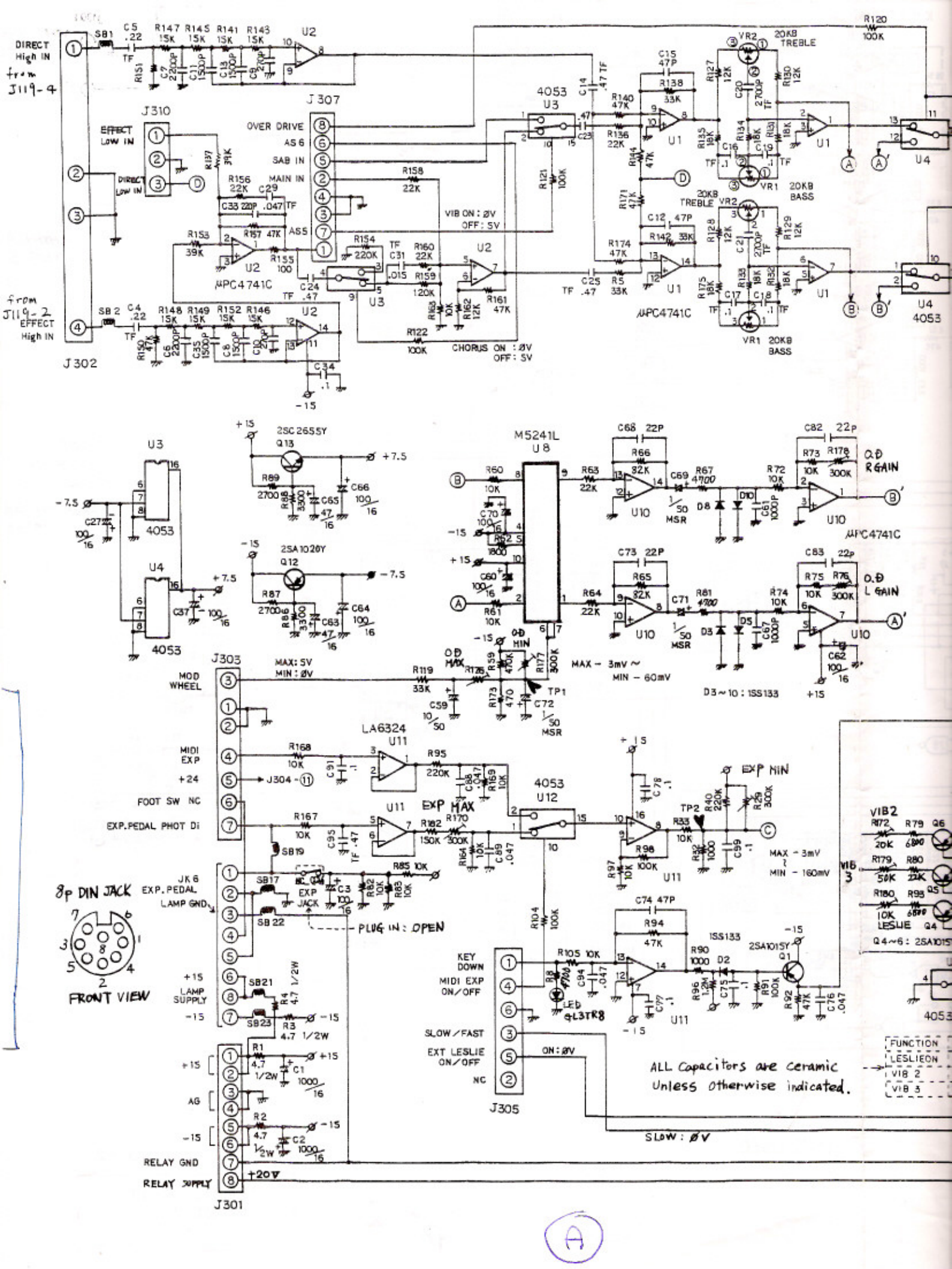
XB-2

LEFT PANEL SWITCH
SWH-402A
225-34216



XB-2

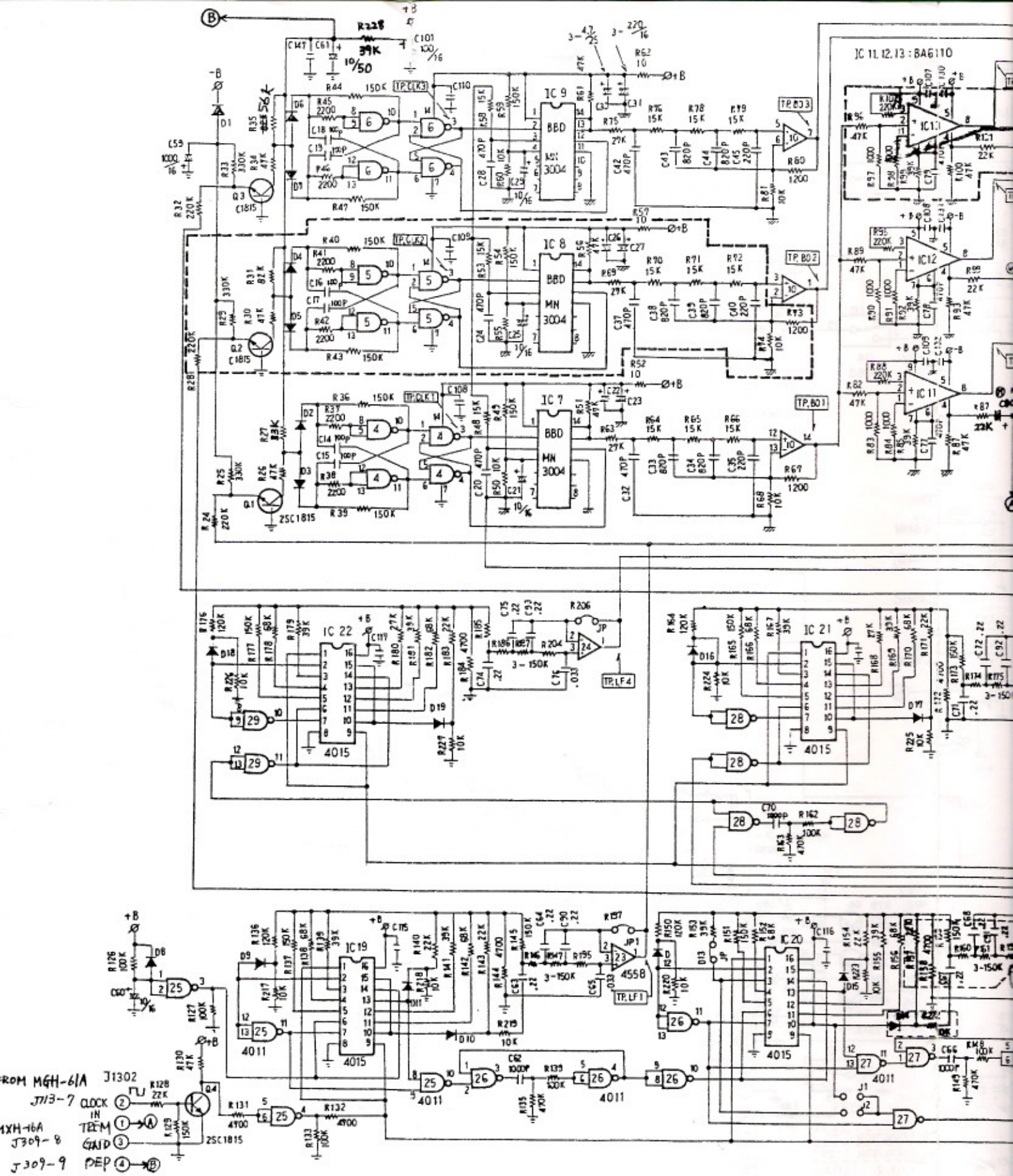
DAC & FILTER
FLH-45A
222-17241


DIRECT High IN from J119-4
EFFECT Low IN
DIRECT Low IN
from J119-2 EFFECT High IN
J302
J310
J307
OVER DRIVE
AS 6
SAB IN
MAIN IN
AS 5
VIB ON : ØV OFF : 5V
CHORUS ON : ØV OFF : 5V
4053 U3
U1
U2
U4
μPC4741C
VR1 20KB BASS
VR2 20KB TREBLE
M5241L U8
U10
O.D GAIN
O.D MIN
O.D MAX
MAX - 3mV ~ MIN - 60mV
D3 ~ 10 : 1SS133
2SC2655Y Q13
2SA1026Y Q12
J303
MOD WHEEL
MAX: 5V MIN : ØV
MIDI EXP
+24
FOOT SW NC
EXP.PEDAL PHOT DI
LA6324 U11
EXP MAX
EXP MIN
MAX - 3mV ~ MIN - 160mV
8P DIN JACK
JK 6
EXP. PEDAL LAMP GND
EXP JACK
PLUG IN : OPEN
FRONT VIEW
LAMP SUPPLY
J301
RELAY GND
RELAY SUPPLY
+20V
KEY DOWN
MIDI EXP ON/OFF
SLOW / FAST
EXT LESLIE ON/OFF
NC
J305
LED GL3TR8
2SA1015Y Q1
ON : ØV
SLOW : ØV
VIB 3
LESLIE
Q4 ~ 6 : 2SA1015Y
ALL Capacitors are ceramic Unless Otherwise indicated.
FUNCTION
LESLIE ON
VIB 2
VIB 3

XB－2

MIXER
MXH-16A
230-06201

B

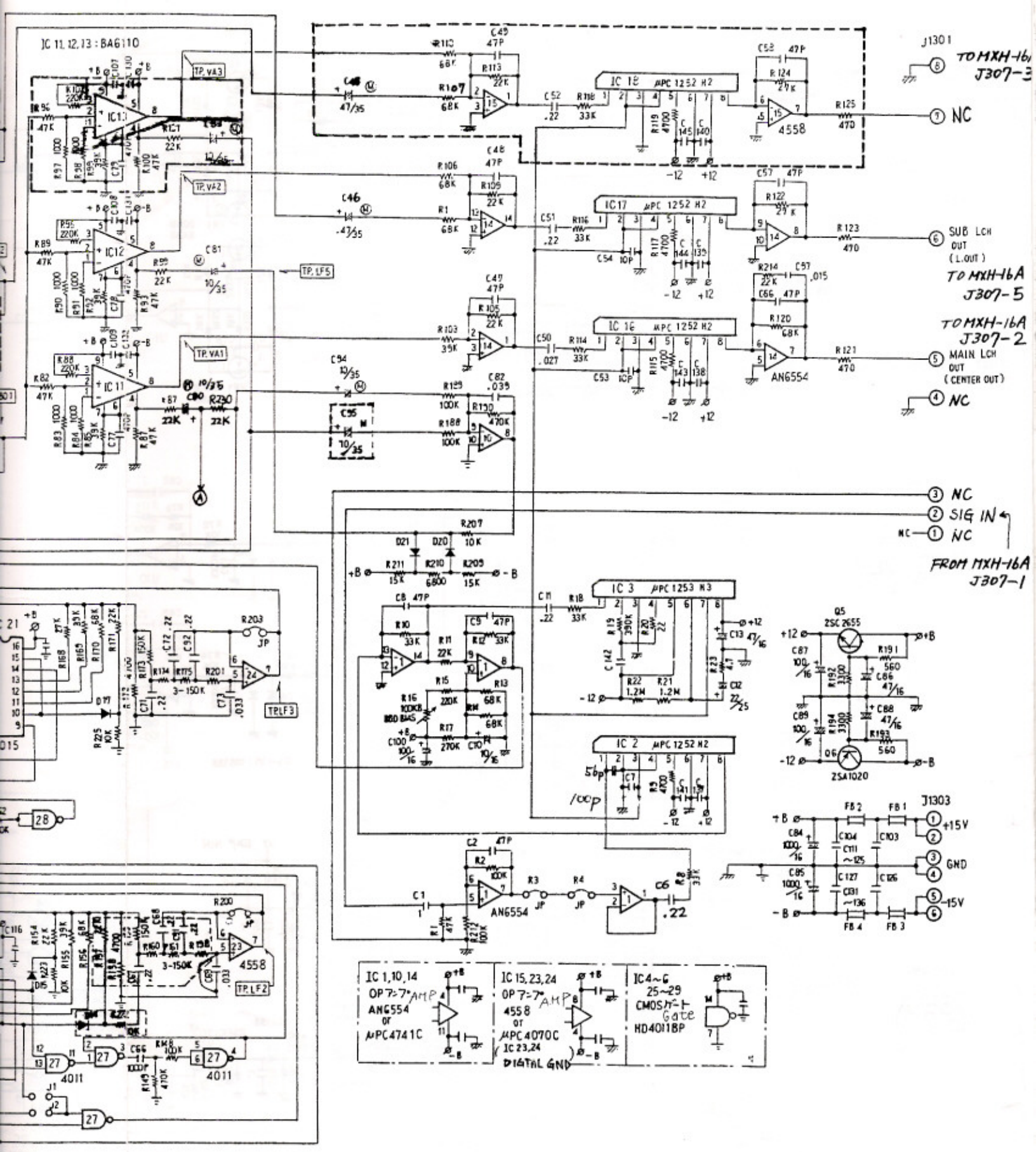


NOTE:

- D1~12, 14~21 1SS133
- FB1~4 Ferite Beeds
- (T) Tantalum
- (M) MSR Electrolytic Capacitors
- Ceramics .047μF/25V

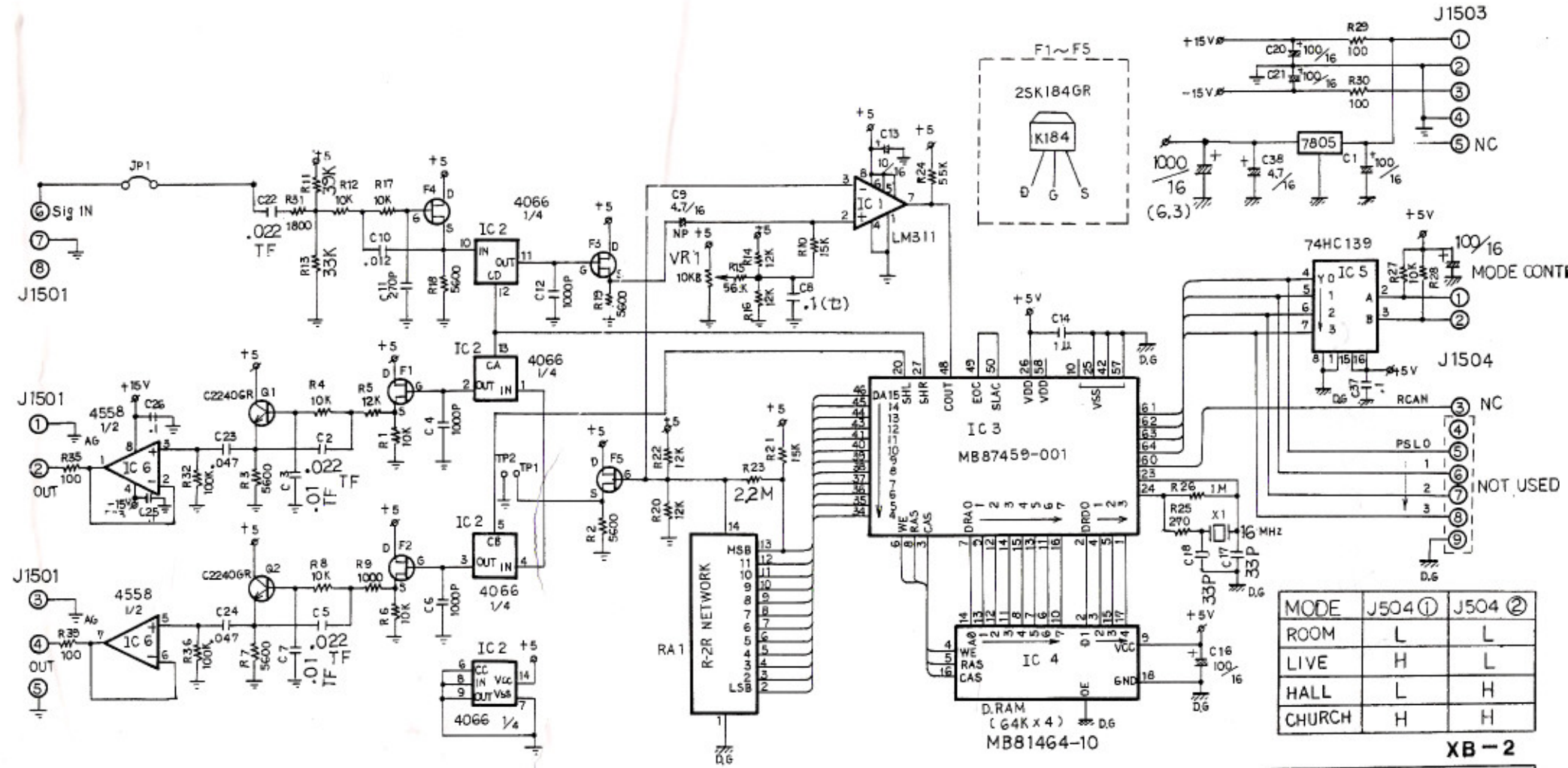
NOT

(A)


IC 11,12,13 : BA6110
IC 18 μPC 1252 H2
IC 17 μPC 1252 H2
IC 16 μPC 1252 H2
IC 3 μPC 1253 H3
IC 2 μPC 1252 H2
AN6554
4558
J1301
TO MXH-16A J307-3
NC
SUB LCH OUT (L.OUT)
TO MXH-16A J307-5
TO MXH-16A J307-2
MAIN LCH OUT (CENTER OUT)
NC
NC
SIG IN
NC
FROM MXH-16A J307-1
Q5 2SC2655
Q6 2SA1020
J1303
+15V
GND
-15V
TP.VA3
TP.VA2
TP.VA1
TP.LF5
TP.LF3
TP.LF2
IC 1,10,14 OP アンプ AN6554 or μPC4741C
IC 15,23,24 OP アンプ 4558 or μPC4070C IC 23,24 DIGITAL GND
IC4~6 25~29 CMOS ﾅｰﾄ Gate HD4011BP
NOT USED
XB－2
LESLIE & VIBRATO
EFH-221C
223-40288
B
10－9

After 9106 xxxx ~

VR1 : NOT USE
R15 : NOT USE
R16 : 11.5K Ω



MODE	J504 ①	J504 ②
ROOM	L	L
LIVE	H	L
HALL	L	H
CHURCH	H	H

XB-2

DIGITAL REVERB
EFH-227A
223-41226

SERVICE PARTS LIST

XB-2, XB-2N

April , 1991

HAMMOND SUZUKI LTD.

SERVICE PARTS LIST

PARTS ORDERING INFORMATION

When ordering replacement parts from the Hammond Suzuki Ltd.,the following guidelines should be observed:

1) Address all part orders to:

HAMMOND SUZUKI LTD
SERVICE DEPARTMENT
25-12,Ryoke 2 chome,
Hamamatsu430(Shizuoka)
Japan

TEL 053-462-7810
FAX 053-462-7815

2) All orders should specify the model and serial number of the instrument that is being serviced. (Note: the model and serial number is printed on the nameplate attached to the underside of the organ keyboard.)

3) All orders should specify the Hammond part numbers of the desired parts.

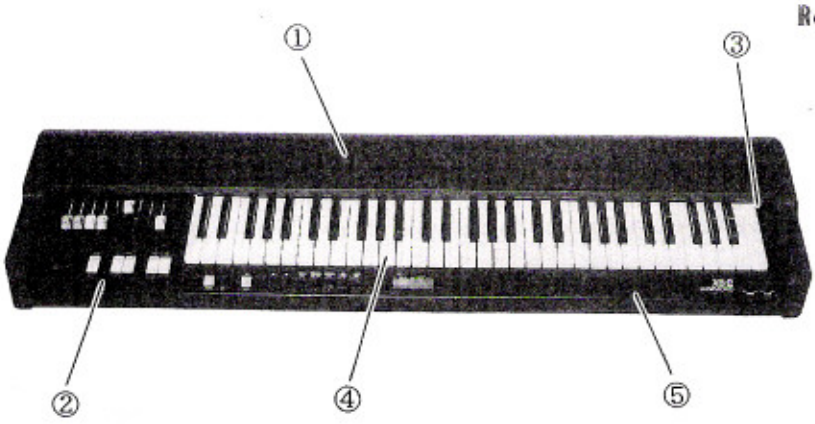
4) All orders should provide spacific descriptions of the desired parts. (For example: Power transformer, PWB-72A Ass'y, F through B Key mold, etc.)

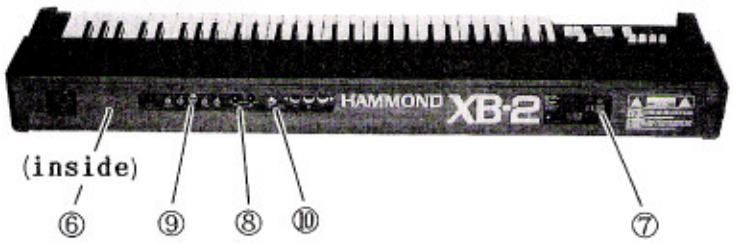
TABLE OF CONTENTS

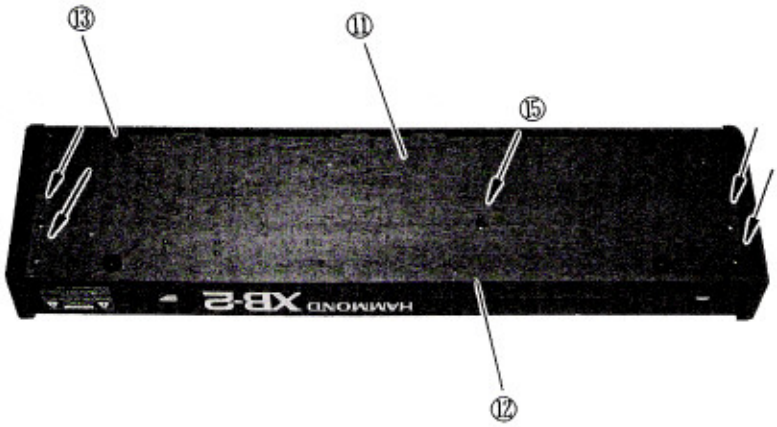
Page

1. TOTAL ASS'Y ---- 3
2. PRINTED WIRING BOARD ASS'Y LIST ---- 5
3. PWB ASS'Y LOCATION ---- 5
4. KEYBOARD ASS'Y ---- 6
5. FRONT PANEL ASS'Y ---- 6
6. TOP BOARD ASS'Y ---- 7
7. ENDBLOCK(L) ASS'Y ---- 7
8. WHEEL ASS'Y ---- 8
9. EXPRESSION PEDAL ASS'Y ---- 9

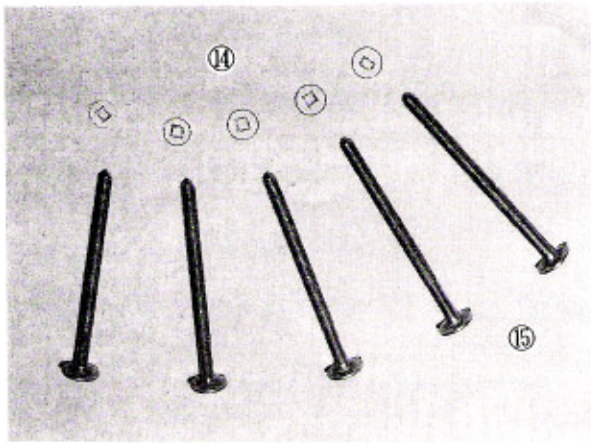
1. TOTAL ASS'Y

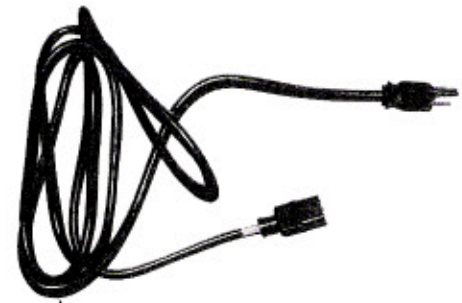






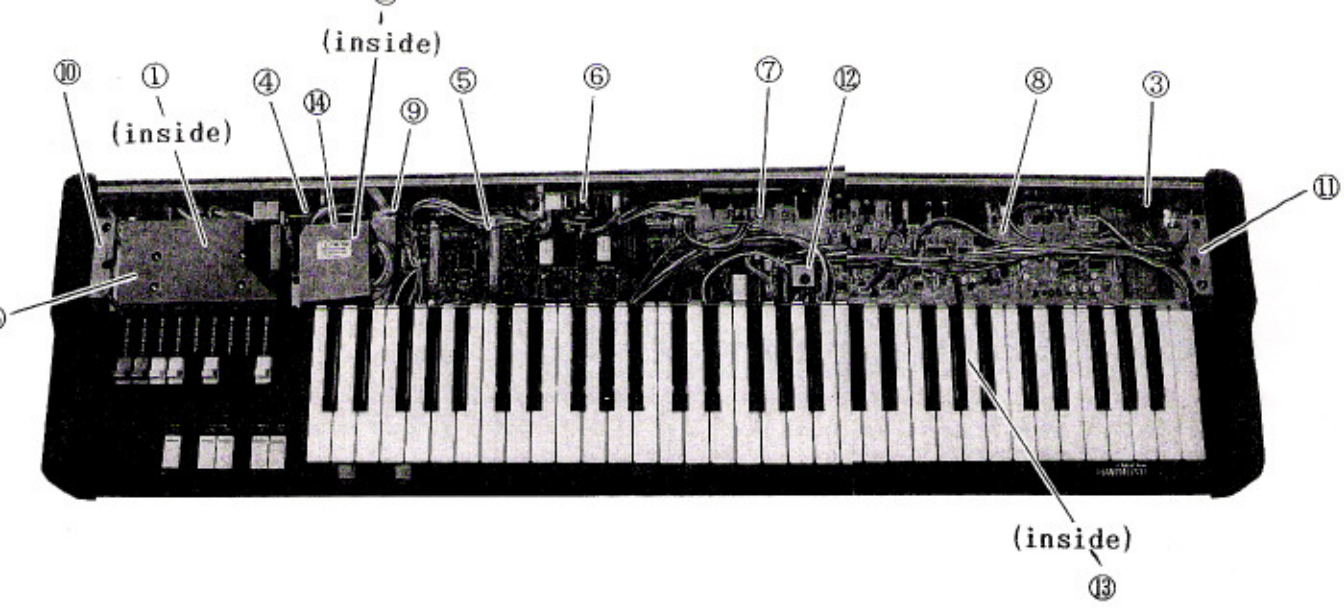
Ref.No.	Description	Part No.
①	Top Board Ass'y	105-17236
②	Endblock(L) Ass'y	105-17244
③	〃 (R)	402-01944
④	Keyboard Ass'y	105-17241
⑤	Front Panel Ass'y	105-17242
⑥	Jack Panel	401-13366
⑦	Switch Cap ES	M1332
⑧	Volume Knob TK1154 (Screw Lock type)	304-02120
⑨	Jack Nut(with Jack)	M12
⑩	〃 (〃)	M9
⑪	Bottom Board Ass'y	105-17232
⑫	Staple (W4 x L19)	
⑬	Rubber foot K12	402-05084
⑭	Washer TM-147 No.5566(M6)	
⑮	Joint Connector Bolt	JCBB-0113M





Power Supply Cord

100V	439-02002
120V	439-01004
220V	439-01005
240V	439-01006

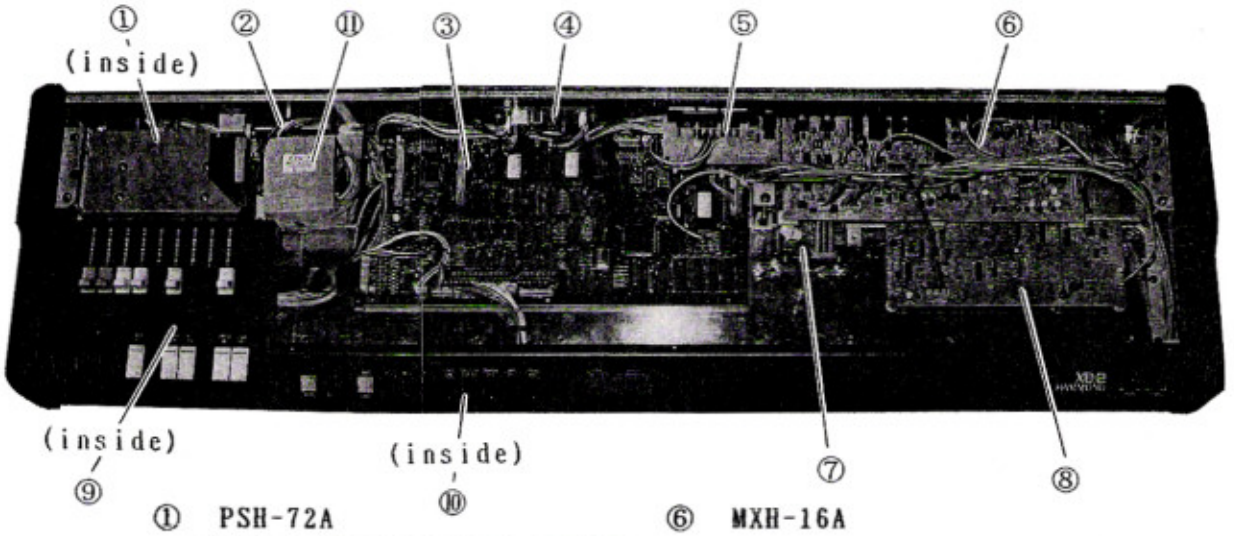


Ref No.	Description	Part No.
①	Drawbars Ass'y(DB-209E)	278-09206
②	Power Supply Trans.Ass'y EPH-96	105-17247
③	LESLIE 11-pin Connector SA-607B-00	317-09007
④	P.W.B. Ass'y SWK-290C	225-28218
⑤	〃 MGH-61A	228-22206
	MGH-61AN	228-22206N(for XB-2N)
⑥	〃 FLH-45A	222-17241
⑦	〃 SWH-401A	225-34211
⑧	〃 MXH-16A	230-06201
⑨	Electric Conductive Tape	T-200,W-20mm
⑩	Top Board Bracket(L)	401-13376
⑪	〃 (R)	401-13377
⑫	〃 (C)	401-13378
⑬	Shield Cover XB-2	402-02229
⑭	Insulation Fiber(Trans)	402-16013
⑮	〃 (Drawbars)	402-16014

2. PRINTED WIRING BOARD ASS'Y LIST

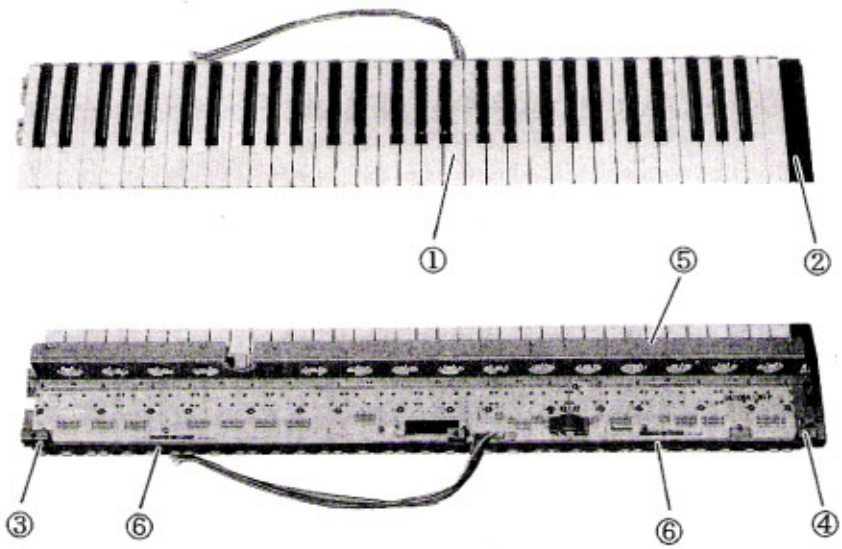
XB-2 P. W. B		
MAIN (for XB-2N)	MGH-61A (MGH-61AN)	228-22206 (228-22206N)
AC INPUT	SWK-290C	225-28218
POWER SUPPLY	PSH-72A	224-18206
PRESET SW	SWH-400A	225-34206
MIDI JACK	SWH-401A	225-34211
SWITCH	SWH-402A	225-34216
DAC & FILTER	FLH-45A	222-17241
MIXER	MXH-16A	230-06201
D・REV (XB-2 only)	EFH-227A	223-41226
LESLIE	EFH-221C	223-40288

3. P.W.B ASS'Y LOCATION



① PSH-72A (under the Drawbars Ass'y)
② SWK-290C
③ MGH-61A (MGH-61AN for XB-2N)
④ FLH-45A
⑤ SWH-401A
⑥ MXH-16A
⑦ EFH-227A (SP-16 ALESIS PWB is shown, but EFH-227A is not shown.)
⑧ EFH-221C
⑨ SWH-402A
⑩ SWH-400A
⑪ Power Supply Trans Ass'y EPH-96

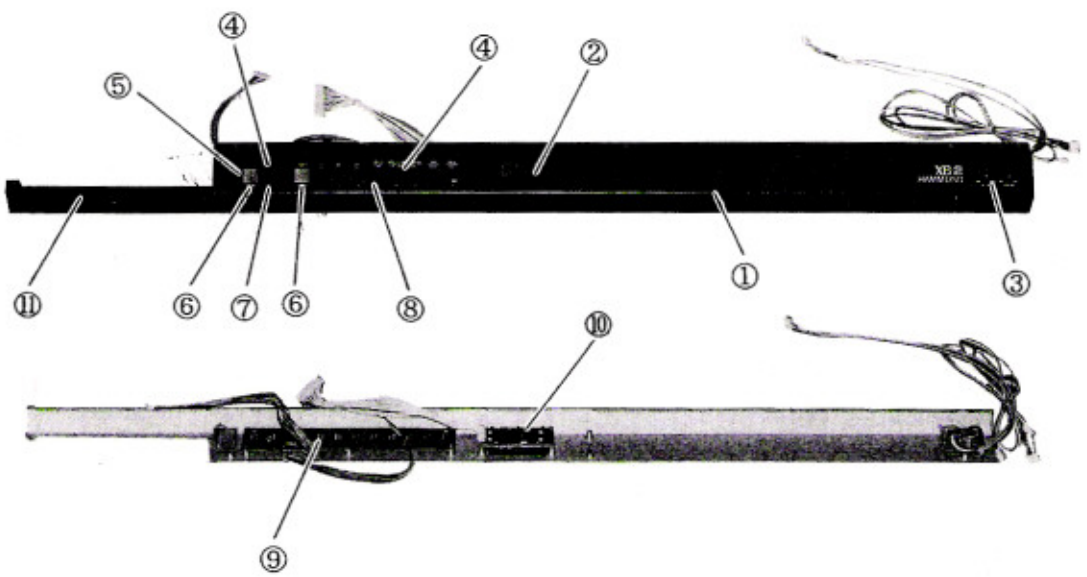
4. KEYBOARD ASS'Y



Ref.No.	Description	Part.No.
①	Keyboard Ass'y	105-17241
②	Endblock(R)	402-01944
③	Keyboard Bracket (Rear Left)	401-13373
④	〃 (Rear Right)	401-13374
⑤	〃 (Front)	401-13375
⑥	Key Stopper Bracket	401-13396

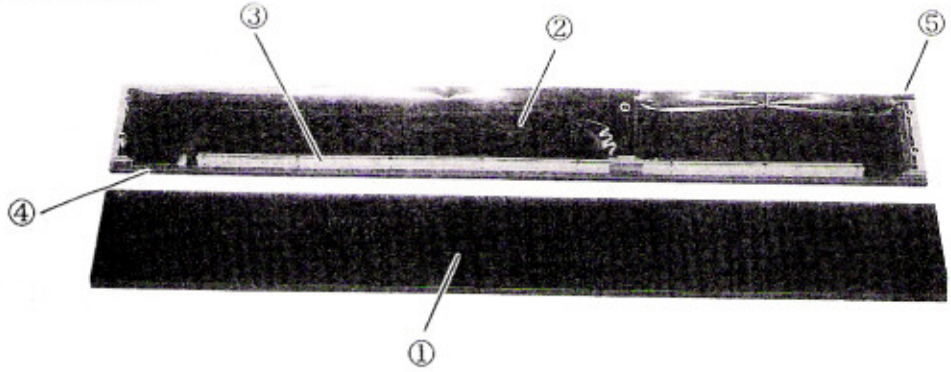
Key.WHT	(CF)	STBG1100A
	(D)	1110A
	(EB)	1120A
	(G)	1130A
	(A)	1140A
	(CC)	1150A
.BLK		2070A
Rubber Switch	(6 Coupling)	SSPG6004A
〃	(7 Coupling)	〃 7004A

5. FRONT PANEL ASS'Y



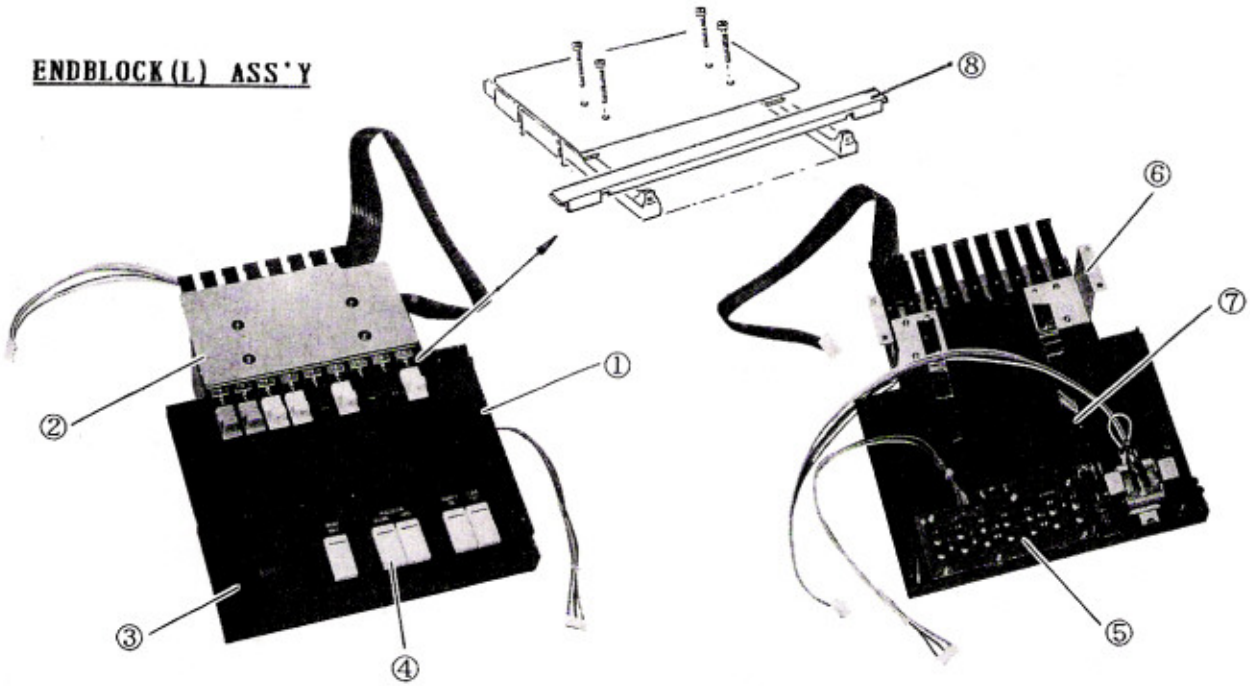
Ref.No.	Description		Part No.
①	Front Panel		401-13370
②	Display Cover H		402-01943
③	Volume Knob		304-02116
④	Switch Frame	MD0340215	402-01946
⑤	〃	MD0340216	402-01947
⑥	Color Button	TZ-0304	402-01948
⑦	〃	TZ-0410	402-01949
⑧	〃	TZ-0310	402-01950
⑨	P.W.B Ass'y	SWH-400A	225-34206
⑩	LCD Unit Ass'y		105-17246
⑪	Electric Conductive Tape T-200.W-15mm.L-10cm		

6. TOP BOARD ASS'Y



Ref.No.	Description	Part No.
①	Top Board Ass'y	402-22597
②	Aluminum Foil	402-02220
③	Top Board Support Bracket	401-13397
④	Top Board Cushion	402-06095
⑤	Key Felt H	402-03368

7. ENDBLOCK(L) ASS'Y



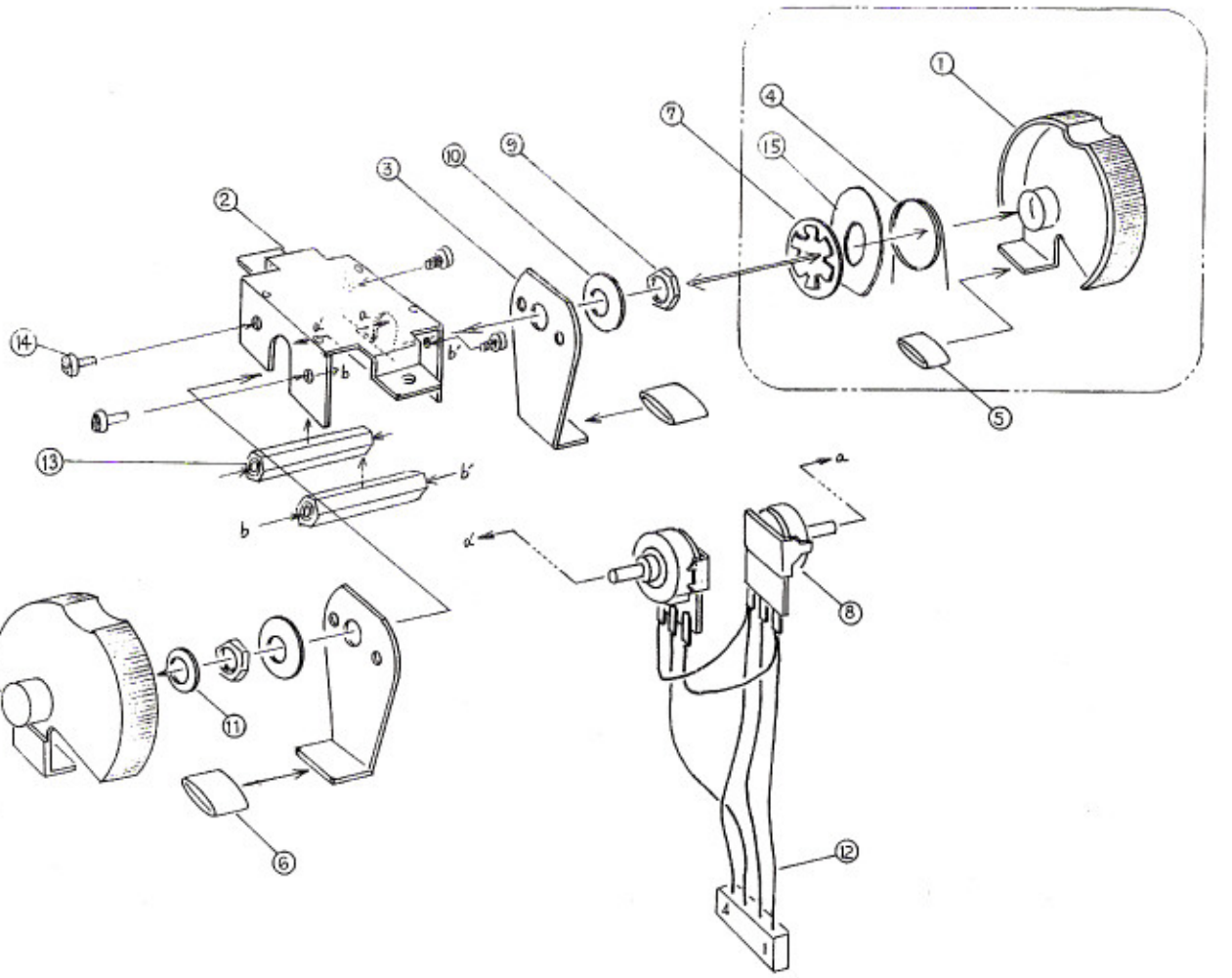
Ref.No.	Description	Part No.
①	Endblock(L)	402-01936
②	Drawbars Ass'y DB-209E	278-09206
③	Wheel Ass'y	105-17243
④	Key Top L2	279-01000A
⑤	P.W.B Ass'y SWH-402A	225-34216
⑥	Endblock Bracket	401-13369
⑦	Electric Conductive Tape	T-200,W-15mm
⑧	Endblock Plate	401-13368

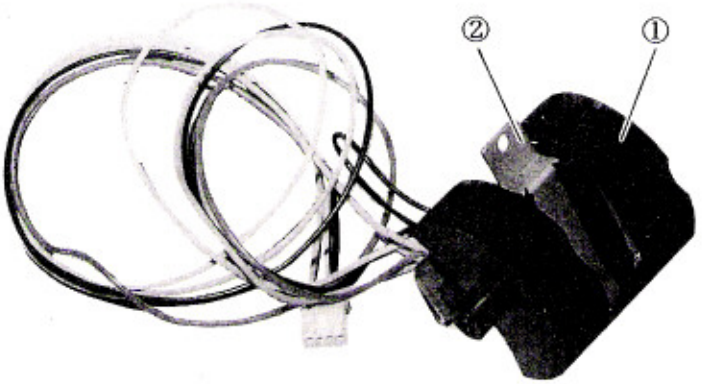
Color	BEIGE	BEIGE	YG	YG	BLK	YG	BLK	BLK	YG
Letter	16'	5 1/3'	8'	4'	2 2/3'	2'	1 3/5'	1 1/3'	1'
Letter Color	BLK	BLK	RED	RED	WHT	RED	WHT	WHT	RED
Part No.206	-00221	-00220	-00209	-00208	-00215	-00207	-00214	-00213	-00206

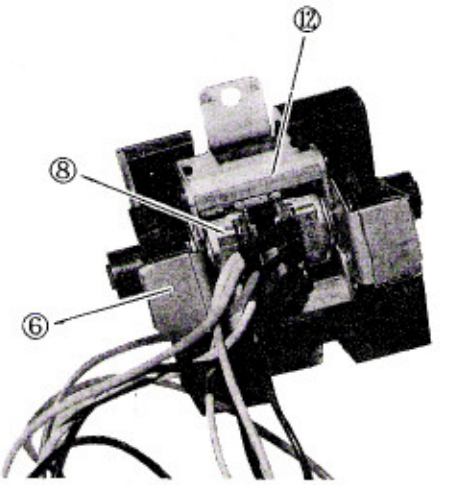
Drawbar (DB-209E)

8. WHEEL ASS'Y

Wheel (bender side) Sub Ass'y



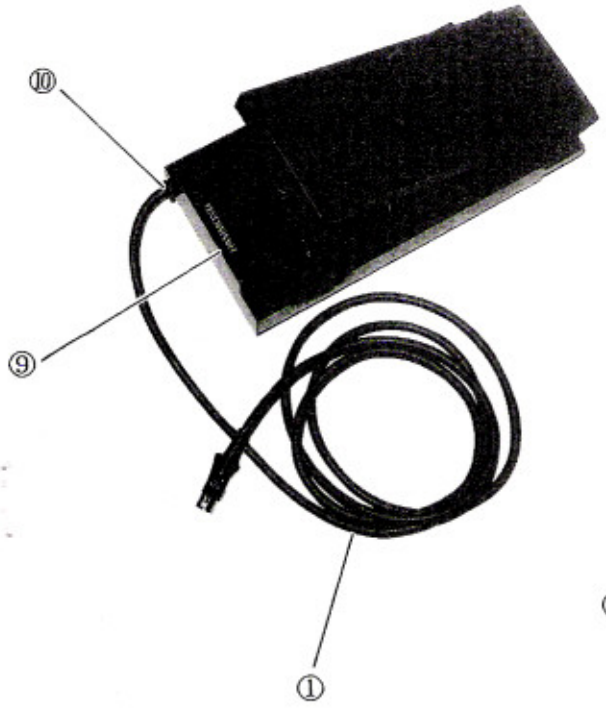


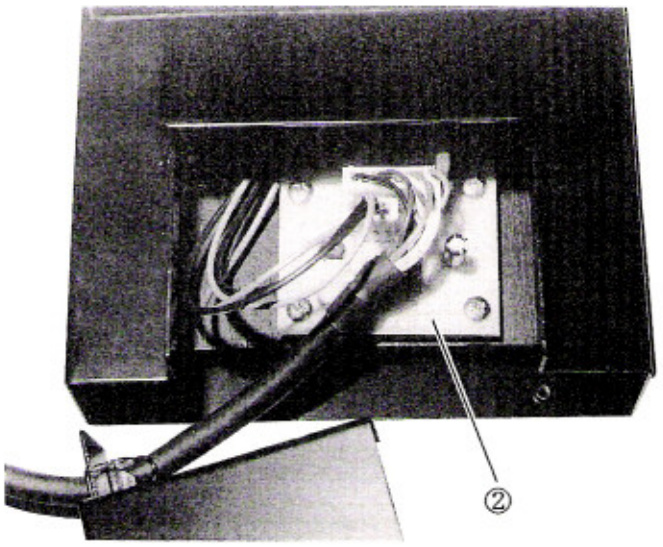


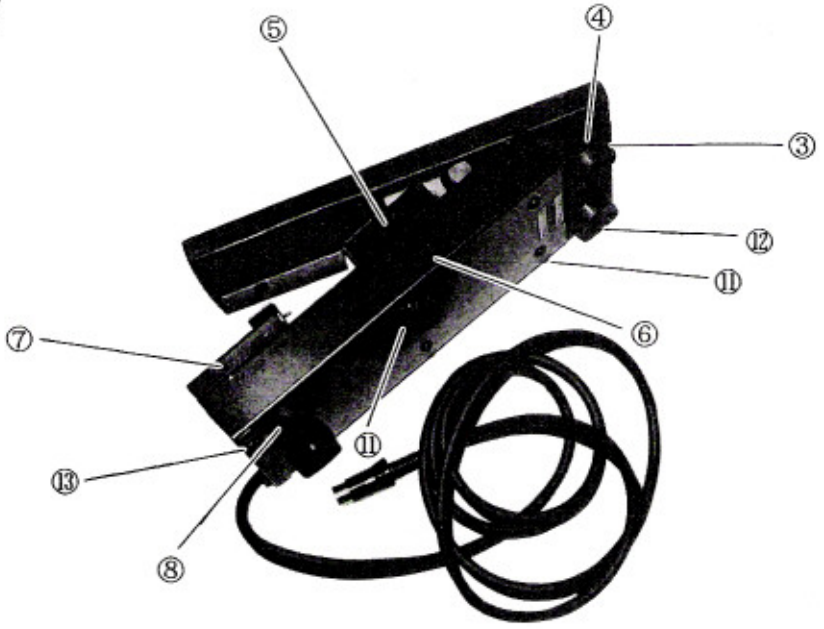
Ref.No.	Description	Part No.
①	Wheel H	402-01935
②	Bender Bracket	401-13362
③	Wheel Stopper	401-13363
④	Wheel Spring	401-06065
⑤	Vinyl Tube L6	402-01941
⑥	〃 L10	402-01942
⑦	CS Type Lock ring	
⑧	Volume 10KB	
⑨	Volume Nut M9	

Ref.No.	Description	Part No.
⑩	Plain Washer	
⑪	Felt Washer	402-03372
⑫	WR-V19	105-17413
⑬	Hexagon Long Nut #25.8	401-05122
⑭	Tapping Screw ⊕ Truss M3x6 (ZnB)	
⑮	Vinyl Chloride Washer	402-01973

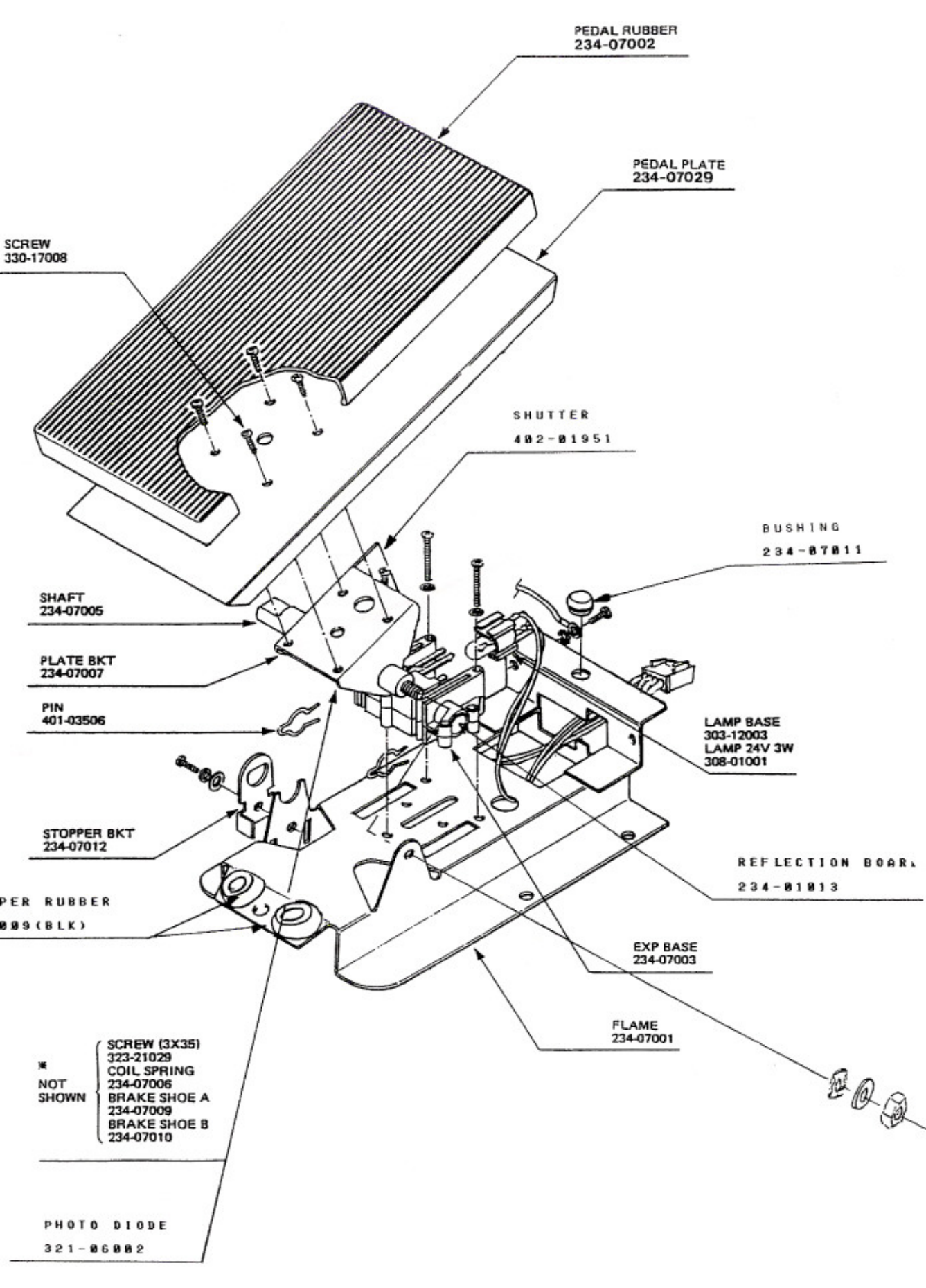
9. EXPRESSION PEDAL ASS'Y(EXP-100A)







Ref.No.	Description	Part.No.
①	Wiring WR-EXP-100	109-76204
②	PWB Ass'y EFH-226A	223-41221
③	EXP.P.Base	402-22605
④	EXP.P.Cover(1)	401-12246
⑤	〃 (2)	401-12247
⑥	〃 (3)	401-12248
⑦	〃 (4)	401-12249
⑧	Rubber Foot K12(7034)	
⑨	"HAMMOND" Seal	402-02226
⑩	Cord Bush R-5J(NA-5R)	
⑪	Tapping Screw(Atype)	φ 4x12,Bind.BLK
⑫	〃 (Atype)	φ 4x16,Bind.BLK(for Rubber Foot)
⑬	〃 (Btype)	φ 3x 8,Bind.BLK


PEDAL RUBBER
234-07002
PEDAL PLATE
234-07029
SCREW
330-17008
SHUTTER
402-01951
BUSHING
234-07011
SHAFT
234-07005
PLATE BKT
234-07007
PIN
401-03506
LAMP BASE
303-12003
LAMP 24V 3W
308-01001
STOPPER BKT
234-07012
REFLECTION BOARD
234-01013
PER RUBBER
009(BLK)
EXP BASE
234-07003
FLAME
234-07001
* NOT SHOWN
SCREW (3X35)
323-21029
COIL SPRING
234-07006
BRAKE SHOE A
234-07009
BRAKE SHOE B
234-07010
PHOTO DIODE
321-06002